

## VPDES PERMIT PROGRAM FACT SHEET

This document gives pertinent information concerning the reissuance of the VPDES permit listed below. This permit is being processed as a **Minor Municipal** permit. The effluent limitations contained in this permit will maintain the Water Quality Standards of 9 VAC 25-260-00 et seq. The discharge results from the discharge of treated domestic sewage from a high school, with another discharge of commingled vehicle wash water and storm water. This permit action consists of reissuing the permit for a five year term. SIC Codes: 8211 (secondary schools), 4952, 4151 (School Bus Operation) and 7542 (Carwashing)

1. Facility Name and Address: Nottoway High School STP  
5267 Old Nottoway Rd, Crewe  
  
Location: Rt. 460 East of Nottoway Courthouse, Nottoway County
2. Permit No. VA0061158 Existing Permit Expiration Date: June 4, 2016
3. Owner Contact: Name: Robbie Templeton  
Title: Maintenance Supervisor  
Telephone No: (434) 292-1160
4. Application Complete Date: July 31, 2015  
Permit Drafted By: Lewis J. Pillis Date: Blue Ridge Regional Office  
Reviewed By: Kirk Batsel Date: April 5, 2016  
Public Comment Period Dates: from April to May, 2016
5. Receiving Waters Classification:  
Receiving Stream Name: UT Little Nottoway River (AKA Tank Pond Branch)  
River Mile: 0.84 (001), 0.45 (002)  
Basin: Chowan and Dismal Swamp Subbasin: Chowan River Section: 2 Class: III  
Special Standards: none  
  
7-Day, 10-Year Low Flow (7Q10): 0 MGD 1-Day, 10-Year Low Flow (1Q10): 0 MGD  
7Q10 High Flow months: 0 MGD 1Q10 High Flow months: 0 MGD  
30-Day, 5-Year Low Flow (30Q5): 0 MGD Harmonic Mean Flow (HM): 0 MGD  
30-Day, 10-Year Low Flow (30Q10): 0 MGD  
  
Tidal? NO On 303(d) list? YES
6. Operator License Requirements: IV or 4
7. Reliability Class: III
8. Permit Characterization:  
( ) Private ( ) Federal ( ) State (X) POTW  
( ) Possible Interstate Effect ( ) Interim Limits in Other Document (attach to Fact Sheet)

9. **Wastewater Treatment System:**

Table I

OUTFALL NUMBER	DISCHARGE SOURCE	TREATMENT	FLOW MGD
001	Schools with about 1500 persons Cafeteria Labs	Package plant Soda ash feeder being installed tablet chlorination tablet dechlorination sludge holding tank cascade aeration <i>Polishing pond is permanently blocked and has not been used in past 10 years</i>	0.0256 *
002	School property	Overflow from storm water basin	
201	Bus maintenance	Grit Trap in wash bay Septic tank, 30" working depth x 8' long x 4' wide nominal volume = 600 gal	**

\*The STP's design is listed above. The maximum monthly average flow, from 001, in the past 3 years was reported as 0.18 MGD in September 2012. Discharge is reported to be continuous and has been reported to average 0.0-12 MGD for each of the past 12 months.. SCAT Regulation design basis is 16 gpd/person or 24,000 gpd for 1500 persons.

\*\*No flow is observed after 2 or 3 busses are washed. Flow from the bus maintenance operation is estimated at an average of 65 gal/week, in the warm months. Fewer busses are washed when the weather is cold.

10. **Sludge Use or Disposal:** Sludge is hauled to the Hopewell WWTP for final treatment and disposal.

11. **Discharge Location Description:** USGS Topo that indicates the discharge location and other items of interest is included in the Appendix.

Name of Topo: Blackstone West Quadrangle

Latitude 37° 7'25"; Longitude -78° 4'8" (001)

Latitude 37° 7'15"; Longitude -78° 3'59" (002)

12. **Materials Stored:** The facility stores chlorine and dechlorination tablets, 12 B Count Enzymes, and Eater V (degreaser) at the STP. The MSDS for the enzyme product states that it contains ammonium sulfate.

A car wash detergent solution is used for bus washing and is stored in 5 gallon pails inside the bus maintenance building.

- 13 **Ambient Water Quality Information:** The receiving water for outfall 001 is an unnamed tributary (UT), but is locally called Tank Pond Branch. The Branch is about a foot wide with a mud bottom. A tributary enters the Branch, 0.1 mile above the STP/UT confluence (confluence ~320'). The UT, that receives 001, flows about 0.52 stream miles and intersects the UT that receives outfall 201 and storm water from the property. Little Nottoway River is about 0.48 miles from the confluence of the two UT branches.

The critical low flow of the receiving stream has been determined to be zero. This is based on a 1996 memo which states that the UT is dammed above the school and may not release sufficient water to support a perennial stream. The USGS topographic map shows the stream to be intermittent.

Items of interest on the Little Nottoway River (LNR), Upstream to downstream:

- 1 Sampling Station 5ALNT009.80, LITTLE NOTTOWAY RIVER RT. 625 BRIDGE, SE OF CREWE, data is available from 1968-02-26 to 2004-06-23
- 2 Crewe WTP (1 mile above receiving stream confluence with LNR)
- 3 Crewe reservoir overflow enters LNR 0.1 mile below the WTP discharge
- 4 Receiving stream with STP discharge enters LNR, approximately river mile 8.80
- 5 Sampling station 5ALNT004.68 LNR at Rt 626 bridge (downstream station), data is available from 1990-07-02 to 2003-12-08

A TMDL for fecal coliform was developed for the Little Nottoway River in the Chowan River TMDL. The report "Development of Bacterial TMDLs for the Chowan Study Area", re-submitted April 25, 2005, was approved by EPA on October 14, 2005.

14. **Antidegradation Review & Comments:** Tier 1 X Tier 2 \_\_\_\_ Tier 3 \_\_\_\_  
 The State Water Control Board's Water Quality Standards includes an antidegradation policy (9 VAC 25-260-30). All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

An antidegradation review begins with a Tier determination. The UT to Little Nottoway River has been determined to be a Tier 1 waterbody. Justification for changing the tier has not been documented, although the previous permit stated that the quality of the receiving stream was better than the WQSs and that the stream was tier 2. Operation has improved at the STP and parameters that are limited by the permit have been much lower in recent years.

Little Nottoway River is considered to be tier 2. The stream is impaired for recreation due to high bacteria counts, but this does not prevent other uses of the water body from being fully supported.

- Performance has improved since the DEQ inspection and compliance staff provided assistance to the STP staff. The facility had been using free chlorine reagents for TRC testing instead of total chlorine reagents. The most current site inspection report is included in Appendix A.

Effluent Data, maximum from past 3 years:

pH	8.5 SU (1/2015); min = 6.5, 90 <sup>th</sup> percentile is 7.8 SU from STP logs, shown in Appendix A and used in MSTRANTI spreadsheet
Temperature	32.2C (3/2015) 90 <sup>th</sup> percentile is 26.4C from STP logs, shown in Appendix A and used in MSTRANTI spreadsheet
BOD <sub>5</sub>	32 mg/L (12/2013)
TSS	34 mg/L (2/2013)
NH <sub>3</sub> -N	22.5 mg/L (2/2014)
<i>E. coli</i>	90/100 ml (7/2013)
DO, minimum	2.0 (12/2014)



The following table provides the basis for effluent limitations and monitoring requirements associated with the permit parameters. Specific parameters are discussed in detail following the table.

Table IIa **Final Effluent Limitations Table**

Date: From effective date of permit  
To expiration date

Outfall 001  
SIC Code 4952

Parameter	Basis for Limit	Discharge Limitations				Monitoring Requirements	
		Monthly Average	Max Weekly Average	Min	Max	Frequency	Sample Type
Flow (MGD)	NA	NL	NA	NA	NL	5Days/Week	Estimated
pH (SU)	2	NA	NA	6.0	9.0	5Days/Week	Grab
BOD <sub>5</sub>	1,2	24 mg/L 2.3 kg/d	36 mg/L 3.5 kg/d	NA	NA	1/Month	Grab
TSS	1	30 mg/L 2.9 kg/d	45 mg/L 4.4 kg/d	NA	NA	1/Month	Grab
Ammonia-Nitrogen (as N)	2	3.0 mg/L	3.0 mg/L	NA	NA	1/Month	Grab
Dissolved oxygen (mg/L)	2	NA	NA	5.6	NA	1/Week	Grab
Temperature, Celsius	2	NA	NA	NA	NL	1/Week	IS
<i>E. coli</i>	2	126*/100 ml	NA	NA	NA	1/Year	Grab*
AFTER DECHLORINATION						AFTER CHLORINE CONTACT**	
		Monthly Ave.	Max. Weekly Ave.	Min.	Exceptions	Inst. Min.	
Total Residual Chlorine	2	8.3 ug/L	10 ug/L	1.0 mg/L	2	0.6 mg/L	5Days/Week Grab

\* Geometric mean, samples collected between 10 a.m. and 4 p.m., 1/week in one month/year (at least 4 samples) when school is in session, September through May.

\*\* No more than two (2) samples taken after the chlorine contact tank and prior to dechlorination shall be less than 1.0 mg/L for any one calendar month. No TRC sample collected prior to dechlorination shall be less than 0.6 mg/L.

NA = Not Applicable    NL = No Limitations; monitoring only

The basis for limitations codes are:

1. Technology-based limits, 40CFR133 (Secondary Treatment Regulation)
2. Water Quality Standards, 9VAC25-260 (Virginia Water Quality Standards)
3. Best Professional Judgment

Table IIb **Final Effluent Limitations Table**

Date: From effective date  
To expiration date

Outfall 201  
SIC Code 8211, (4151), 7542

Parameter	Basis for Limit	Discharge Limitations				Monitoring Requirements	
		Monthly Average	Max Weekly Average	Min	Max	Frequency	Sample Type
Flow (MGD)	NA	NL	NA	NA	NL	1/6 Months	Estimated
pH (SU)	2	NA	NA	6.0	9.0	1/6 Months	Grab
Temperature, Celsius	3	NA	NA	NA	NL	1/6 Months	IS
TSS	3	NA	NA	NA	60 mg/L	1/6 Months	5G/8HC
Oil and Grease*	3	NA	NA	NA	15 mg/L	1/6 Months	Grab

One sample shall be collected in each season; December – April and May - November

\* EPA Method 1664 Revision A, N-Hexane Extractable Material.

The basis for limitations codes are:

1. Technology-based limits
2. Water Quality Standards, 9VAC25-260 (Virginia Water Quality Standards)
3. Best Professional Judgment

Outfall 001, STP from schools:

**Flow** - The design capacity of this facility is 0.0256 MGD. Flow should be estimated routinely to assure optimum performance in the treatment units.

**BOD<sub>5</sub>** - Water quality-based BOD<sub>5</sub> limits were established using a DEQ dissolved oxygen model in 1976. Conservative assumptions were made so a worst case scenario could be examined. Inspection of the receiving stream by DEQ personnel shows that a receiving stream flow of zero under 7Q10 conditions is appropriate. Discharges of BOD<sub>5</sub> concentrations in excess of the permit limits may cause depletion of dissolved oxygen. The model printouts from previous permit fact sheets are attached in Appendix C.

**TSS** - Total Suspended Solids monthly average and maximum weekly average limits are taken from the Federal Effluent Guidelines (40 CFR Part 133). These are the same as the current permit.

**pH** - The pH range of 6.0 - 9.0 SU is specified in the Water Quality Standards for Class III streams. This pH range is also specified in the Federal effluent guidelines (40 CFR Part 133).

**Total Residual Chlorine (TRC)** – TRC concentration must be a minimum of 1.0 after passing through the chlorine contact tank to maintain disinfection. Agency guidance allows ten percent of these to be less than this. Since TRC will be monitored about twenty times each month, two excursions below 1.0 are allowed.

Final effluent TRC limits, after dechlorination, were previously generated using STATS.EXE, to

protect aquatic life from chronic chlorine toxicity. The monthly average and maximum weekly average limits from the current permit are replaced with the more stringent limits of 10 ug/L weekly average and 8.3 ug/L monthly average. The STATS printout is found in Appendix C.

**Escherichia coli** – This discharge has received a wasteload allocation (WLA) for fecal coliform in the Bacteria TMDL for The Chowan Basin. The allocation is based on the facility discharging fecal coliform bacteria at a level equal to 200 CFU/100 ml (the WQS at the time the TMDL was written). Data compiled by DEQ has demonstrated that on the average, in State waters, 200 fecal coliform bacteria will contain 126 *E. coli*. For this reason, a permit limit for *E. coli*, equal to the *E. coli* WQS of 126/100ml, was added to the permit. Compliance will be demonstrated by sampling weekly in one month a year. If the limit is exceeded then weekly monitoring will resume. The limit is a geometric mean, but will be reported in the monthly average location on the DMR.

**Ammonia** – A decrease is made in the ammonia limit from 8.6 to 3.0 mg/L, for both the monthly average and monthly maximum. The former limit was based on the discharge being intermittent and applying only the acute WQS. The discharge is reported to be continuous and the new limit is based on the chronic WQS. Actual effluent temperatures and ammonia results were used in calculating the WQSs. A summary of this data is in Appendix A. For the past 13 months, ammonia has been less than 1 mg/L, showing that the lower ammonia limit can be met consistently.

Using reported data, effluent temperature is warm in all months and seasonal tiers are not necessary. Documentation on the development of this limit is found in Appendix C.

**Reduced Monitoring Frequency** - During the past three years, the discharge has exceeded ammonia limits in three separate months. The operations cannot be classified as “exemplary” according to Agency Guidance, and monitoring is not reduced.

Permit violations:

NOV W2013-02-L-0002	October 2012 violations December 2012	pH = 15.6, w/o letter of explanation failure to report BOD, TSS NH3
NOV W2013-04-L-0007	February 2013 violations	TSS = 34 mg/L
WL W2014-04-L-1003	February 2014 violations	ammonia ave/max = 11.4/22.5 mg/L
WL W2014-09-L-1001	July 2014 violations	Dissolved oxygen = 5.1 mg/L

## Outfall 002, combined bus maintenance facility (201) and storm water:

Data reported in the 2012 permit application is for a combination of storm water, from a portion of the school, and bus wash water:

BOD 6 mg/L permit application  
COD 30 mg/L permit application  
TSS 14 mg/L max  
Ammonia < 0.2 mg/L

### Storm Water

In the October 2, 1991, Storm Water Clarification memo, EPA stated that bus facilities operated by educational institutions should be classified under SIC 8211. Due to this, storm water from the bus maintenance facility is not considered an industrial activity regulated by storm water regulations. Storm water from this facility does not appear to be contributing to the exceedance of a Water Quality Standard. Monitoring of storm water is not required in the reissued permit. If it is determined that storm water from the facility is causing or contributing to a WQS problem, then the permit may be reopened to address storm water.

If bus maintenance is contracted, then the facility will be classified as SIC 4151, and storm water regulations will be applicable.

## Bus Wash (Maintenance), outfall 201

No discharge data has ever been reported on a DMR for outfall 201. The permittee has stated that there is no discharge from this outfall, when 2 to 4 busses are washed weekly. There will be a discharge when more busses are washed. Since the treatment tank is concrete, it is suspected that the pipe from the maintenance building to the separator tank is leaking.

**BOD** - This outfall was added to the permit after the water quality model was performed for this facility. Consequently there is no BOD allocation available for this discharge. More effluent data is needed before performing further models. Data is requested with this permit. Data for BOD and TKN must be supplied the next permit application.

**Flow** – Although the flow is not limited it needs to be known for the water quality models.

**TSS** – a limit of 60 mg/L is applied since the source of wastewater is similar to a commercial car wash that is regulated by 9 VAC 25-194-70, (Car Wash General Permit). The Car Wash GP limits are based on the discharge being of less than 5000 gpd with sediment removal. Since dilution with storm water cannot be used to meet this limit, internal outfall 201 is created for this limit.

**Oil and Grease** - The DEQ car wash GP limit of 15 mg/L is applied to outfall 201 for the same reasons as for TSS. The current method to be followed is the EPA Method 1664 Revision A, N-Hexane Extractable Material.

**Temperature** – Temperature is needed for use in water quality modeling. The discharge temperature should not exceed the temperature water quality standard of 32°C.

**pH** – these limits are carried forward from the previous permit. They also mirror those in the Car Wash General Permit.

17. **Basis for Sludge Use & Disposal:** Sludge is routine hauled to the City of Hopewell STP for further treatment prior to disposal.
18. **Antibacksliding Statement:** No limits have been relaxed in this reissuance, which is in compliance with the antibacksliding policy.
19. **Compliance Schedules:** None
20. **Special Conditions:**
  - a. **Additional Chlorine Limitations and Monitoring Requirements (I.B)**  
**Rationale:** Required by Sewage Collection and Treatment Regulations, 9VAC25-790. Also, 40 CFR 122.41(e) requires the permittee, at all times, to properly operate and maintain all facilities and systems of treatment in order to comply with the permit. This ensures proper operation of chlorination equipment to maintain adequate disinfection.
  - b. **Compliance Reporting (I.C.1)**  
**Rationale:** Authorized by VPDES Permit Regulation, 9VAC25-31-190 J 4 and 220 I. This condition is necessary when pollutants are monitored by the permittee and a maximum level of quantification and/or a specific analytical method is required in order to assess compliance with a permit limit or to compare effluent quality with a numeric criterion. The condition also establishes protocols for calculation of reported values.
  - c. **95% Capacity Reopener (I.C.2)**  
**Rationale:** Required by VPDES Permit Regulation, 9VAC25-31-200 B 4 for all POTW and PVOTW permits.
  - d. **CTO, CTC, O&M Manual Requirement (I.C.3 and 4)**  
**Rationale:** Required by Code of Virginia § 62.1-44.19; Sewage Control and Treatment Regulations, 9 VAC 25-790; VPDES Permit Regulation, 9 VAC 25-31-190 E.  
  
The O&M Manual should be revised to include inspections of the effluent and maintenance of the bus maintenance wastewater treatment facilities at least once per week and documentation of the maintenance on an Operational Log. These revised are needed pursuant to 9 VAC 25-31-10 et seq., and 40 CFR 122.41(e) which require proper operation and maintenance of the permitted facility.  
  
O&M must include a sludge management plan for cleaning sediment out the separator serving outfall 201.
  - e. **Indirect Dischargers (I.C.5)**  
**Rationale:** Required by 9 VAC 25-31-200 of the VPDES Permit Regulation for Publicly Owned Treatment Works.
  - f. **Sludge Use and Disposal (I.C.6)**  
**Rationale:** VPDES Permit Regulation, 9VAC25-31-100 P; 220 B 2; and 420 through 720, and

40 CFR Part 503 require all treatment works treating domestic sewage to submit information on sludge use and disposal practices and to meet specified standards for sludge use and disposal.

**g. Sludge Reopener (I.C.7)**

**Rationale:** Required by VPDES Permit Regulation, 9 VAC 25-31-220 C for all permits issued to treatment works treating domestic sewage.

**k. Licensed Operator Requirement (I.C.8)**

**Rationale:** The VPDES Permit Regulation, 9 VAC 25-31-200 D and The Code of Virginia 54.1-2300 et seq, Rules and Regulations for Waterworks and Wastewater Works Operators, (18 VAC 160-20-10 et seq.), requires licensure of operators. A requirement to have a Class 4 licensed operator was added to the permit in 2012, after compliance with permit requirements had been inconsistent.

**l. Reliability Class (I.C.9)**

**Rationale:** Required by Sewage Collection and Treatment Regulations, 9VAC25-790 for all municipal facilities

**m. Section 303(d) List (TMDL) Reopener (I.C.10)**

**Rationale:** Section 303(d) of the Clean Water Act requires that total maximum daily loads (TMDLs) be developed for streams listed as impaired. This special condition is to allow the permit to be reopened if necessary to bring it into compliance with any applicable TMDL approved for the receiving stream. The re-opener recognizes that, according to section 402(o)(1) of the Clean Water Act, limits and/or conditions may be either more or less stringent than those contained in this permit. Specifically, they can be relaxed if they are the result of a TMDL, basin plan, or other wasteload allocation prepared under section 303 of the Act.

**n. Effluent Monitoring Frequencies (I.C.11)**

**Rationale:** Permittees are granted a reduction in monitoring frequency based on a history of permit compliance. To remain eligible for the reduction, the permittee should not have violations related to the effluent limits for which reduced frequencies were granted. If permittees fail to maintain the previous level of performance, the baseline monitoring frequencies should be reinstated for those parameters that were previously granted a monitoring frequency reduction.

**o. Bus Wash Special Conditions (I.C.12)**

**Rationale:** The source of wastewater is similar to a commercial car wash that is regulated by 9 VAC 25-194-70, (Car Wash General Permit). Special conditions for maintenance of the operation are warranted.

**p. Materials Handling/Storage (I.C.13)**

**Rationale:** 9VAC25-31-50 A prohibits the discharge of any wastes into State waters unless authorized by permit. Code of Virginia §62.1-44.16 and §62.1-44.17 authorizes the Board to regulate the discharge of industrial waste or other waste. Materials should be stored inside a storm resistant shelter.

**q. Part II, Conditions Applicable to All Permits**

**Rationale: VPDES Permit Regulation, 9 VAC 25-31-190 requires all VPDES permits to contain or specifically cite the conditions listed.**

**21. Changes to Permit:**

Parameter Changed	Monitoring Requirement Changed		Effluent Limits Changed		Reason for Change	Date
	From	To	From	To		
<i>E. coli</i> (001)	1/wk	1/year	NC		Permit Manual MN-3, p.3	10/29/15
Ammonia	NC		8.6	3.0	Actual data used	4/7/16
TRC	NC		9.8 mo ave 12 wk ave	8.3 ug/L 10ug/L	Chronic WQS used	4/7/16

NC = not changed

**Special Conditions changes in this permit**

Some special conditions have not been modified except for their number or to reflect current guidance. Only the special conditions listed below have been modified in content or added to this permit:

- CTC, CTO Special Condition, and O&M Manual, has been modified to reflect current agency guidance and State regulation.
- Materials Handling added, since chemicals are used in bus maintenance
- Monitoring frequency added, since *E.coli* is once per year.

**22. Variances/Alternate Limits or Conditions: NA**

**23. Regulation of Users per 9 VAC 25-31-280 B 9: There are no industrial users contributing to the treatment works.**

**24. Public Notice Information required by 9VAC25-31-280 B:**

All pertinent information is on file and may be inspected, and copied by contacting Lewis J. Pillis at: Virginia DEQ, 3019 Peters Creek Road, Roanoke, VA 24019, telephone no. (540) 562-6789, or lewis.pillis@deq.virginia.gov.

Persons may comment in writing or by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer and of all persons represented by the commenter/requester, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit. Requests for public hearings shall state 1) the reason why a hearing is requested; 2) a brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit; and 3) specific references, where possible, to terms and conditions of the permit with suggested revisions.

Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given. The public may review the draft permit and application at the DEQ Blue Ridge Regional Office, in Roanoke, by appointment.

Following the comment period, the Board will make a determination regarding the proposed reissuance. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given.

25. **Additional Comments:**

**Previous Board Action:** A Letter of Agreement (LOA) dated September 10, 2012, was negotiated with the County. The LOA required the County to implement operational changes and BMPs identified during a DEQ Operator Training and Compliance Assistance Program site visit, make monthly compliance evaluations with changes deemed necessary, evaluate the success of corrective action by February 1, 2013, and achieve consistent compliance with the permit by September 15, 2013. The LOA terminated automatically in September 2013.

**Staff Comments:** The discharge is not controversial and is not addressed in any planning documents, but will be included, if required, when the plan is updated.

**Public Comment:** No comments were received during public notice.

**Other comments:** VDH commented that there are no raw water intakes within 15 miles downstream of the discharge or apparent impacts to waterworks sources as a result of this permit.

26. **303(d) Listed Segments (TMDL):** This facility discharges directly to an unnamed tributary of Little Nottoway River. This stream segment receiving the effluent contributes to the listed non attainment of fecal coliform in part I of the current approved 303(d) list. An allocation for fecal coliform is present in the Development of Bacterial TMDLs for the Chowan Study Area”, April 25, 2005. The TMDL was approved by EPA on 10/14/2005.

The approved TMDL contains a WLA for this discharge of  $4.46 \times 10^{10}$  cfu/year. This permit has a limit of 126 *E. coli* /100ml. If the facility discharged at design flow of 0.0256 MGD and at the permit limit every day,  $4.46 \times 10^{10}$  cfu/year would be discharged. The maximum daily flow from this facility in the past three years was 0.0168 MGD. This is in compliance with the TMDL.

**Special Permit considerations:**  
TMDL Reopener is in the permit.

List of Appendices:

Appendix A: USGS map; Site Plan, site visit memo, facility data

Appendix B: Ambient STORET data; flow frequency memo

Appendix C: Dissolved oxygen model, WLA spreadsheet, STATS.exe output

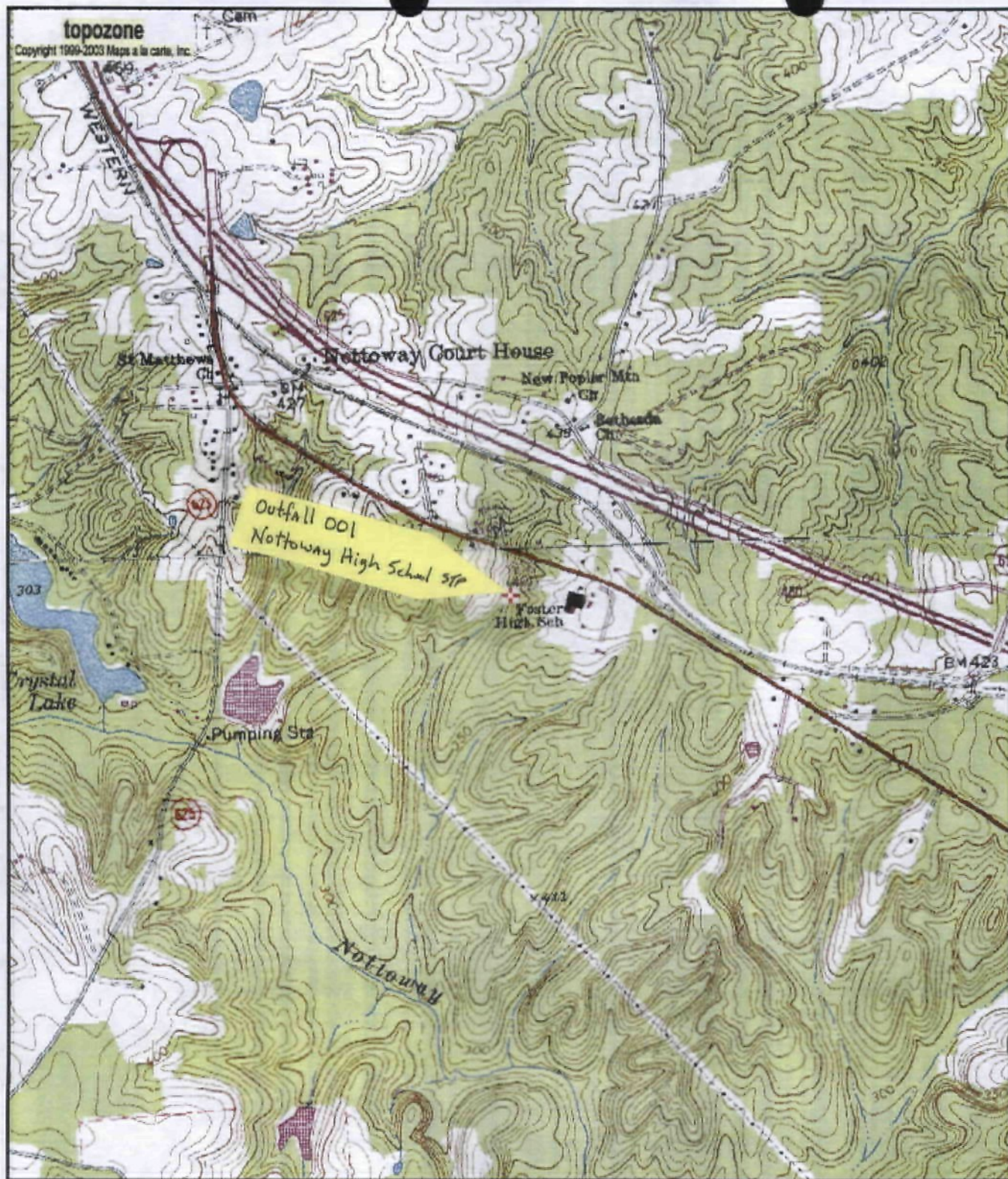
Appendix D: Excerpts from TMDL Report and Car Wash General Permit Regulation



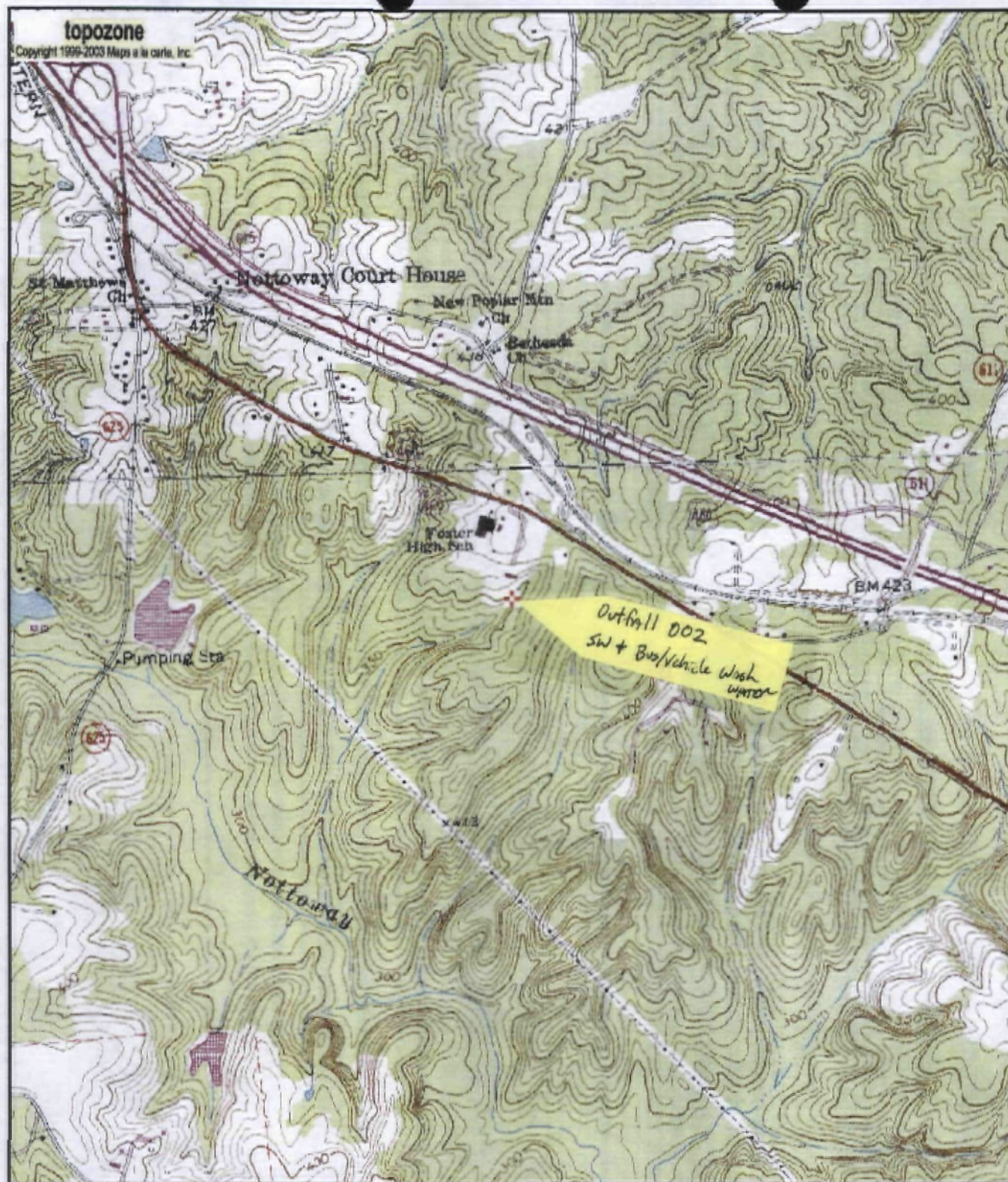
# APPENDIX A

USGS Location Map  
Site Plan  
Site Visit Memo  
Facility DMR Data









0 0.3 0.6 0.9 1.2 1.5 km  
0 0.2 0.4 0.6 0.8 1 mi

37° 07' 16"N, 78° 03' 56"W (NAD83/WGS84)  
**Foster High School, USGS Blackstone West (VA) Quadrangle**  
Projection is UTM Zone 17 NAD83 Datum

M\*  
G  
M=-9.612  
G=1.772



# Nottoway High School - STP (Outfall 001)

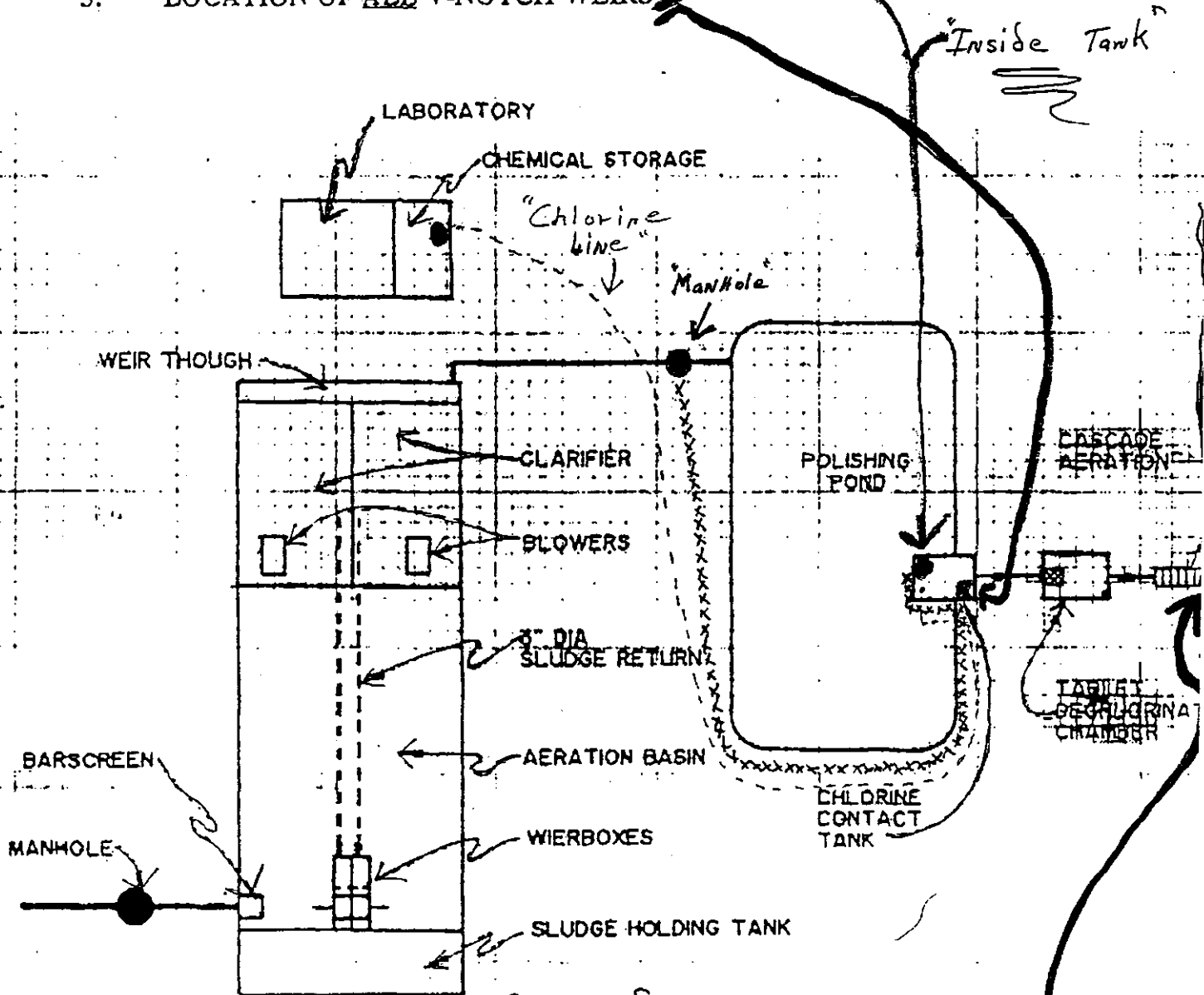
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RICKMOND ENGINEERING

PAGE 02

1. POLISHING POND BY-PASS LINE LOCATION ~~XXXXXXXXXX~~
2. CHLORINE INJECTION POINT ~~XXXX~~
3. LOCATION OF ALL V-NOTCH WEIRS ~~XXXX~~



\* pump + haul by CC Powell & Son  
once a month.

Fall out at end of  
pipe.

Outfall 001

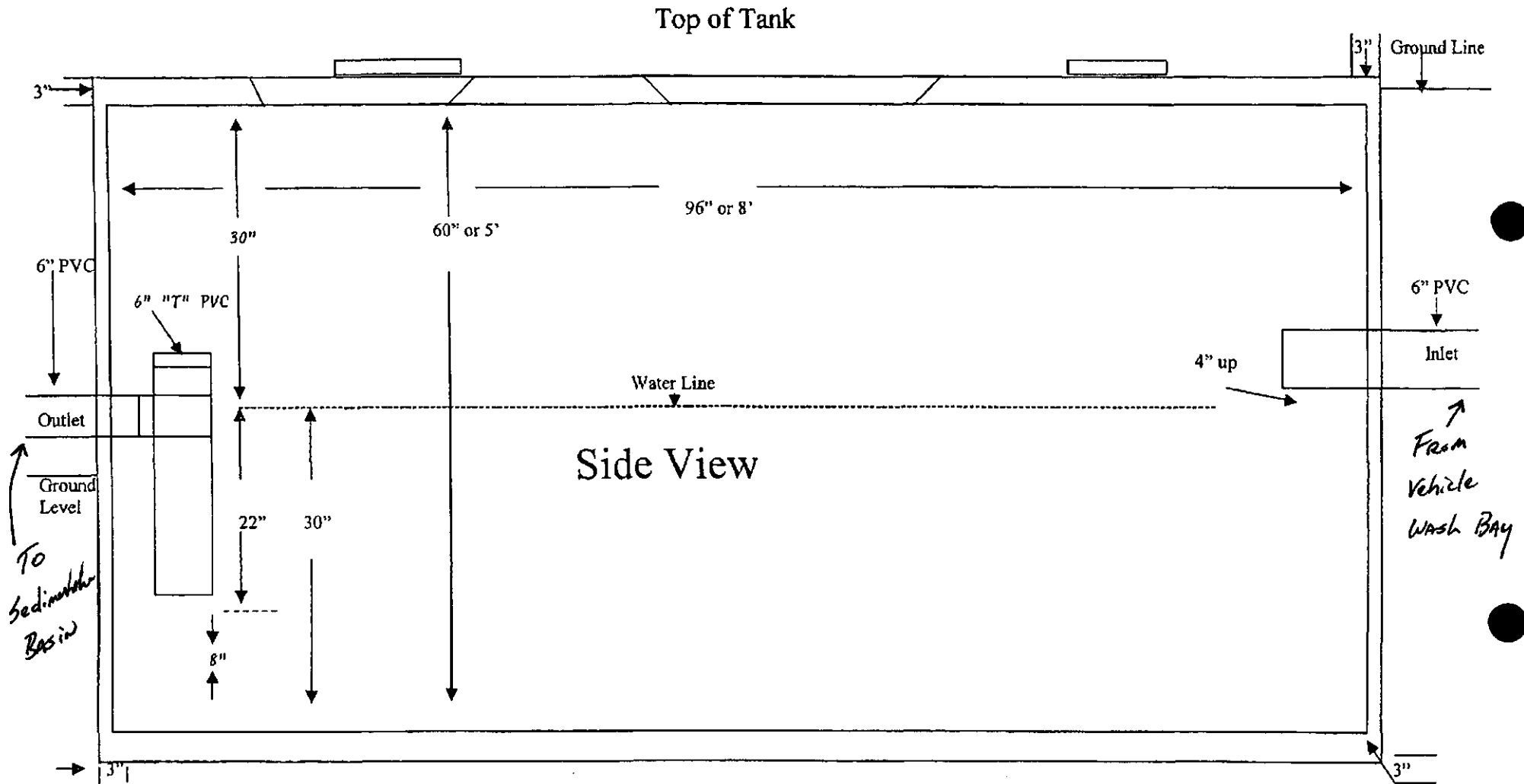
"NOTTOWAY SENIOR"  
HIGH SCHOOL

STP

PLANT SCHEMATIC AND  
FLOW DIAGRAM

( NOT TO SCALE )

## 08/04/2006 07:19





outfall 201 is tank outlet

AREA OF OVRFLOW CONTROL  
STRUCTURE

DISCHARGE  
PIPE

4" OR 6" PIPE

TANK

6" PIPE

WASH BAY

24' MIN. RIP RAP OUTLET  
PROTECTION REQ'D  
(see details)

10' MIN. RIP RAP OUTLET  
PROTECTION REQ'D  
(see details)

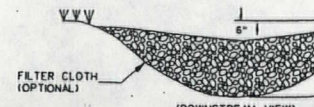
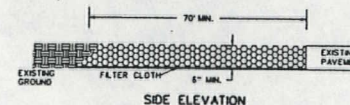
10' MIN. RIP RAP OUTLET  
PROTECTION REQ'D  
(see details)

MAINTENANCE AREA

NOTES (CONT.):

- 4.) ALL EROSION AND SEDIMENT CONTROL SHALL BE COMPLIANCE WITH THE LAWS OF VIRGINIA AND THE VIRGINIA EROSION & SEDIMENT CONTROL HANDBOOK THIRD EDITION, 1992.
- 5.) CONTRACTOR SHALL OBTAIN E&S PERMIT BEFORE COMMENCING ANY WORK.
- 6.) SEE DETAILS FOR E&S REQUIREMENTS AROUND STRUCTURES.
- 7.) PERIMETER SEDIMENT BARRIERS SHALL BE CONSTRUCTED AS FIRST STEP IN LAND DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE DISTURBANCE TAKES PLACE.
- 8.) DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES.
- 9.) CONSTRUCTION ENTRANCE(S) SHALL BE INSTALLED AT ALL USED INGRESS AND EGRESS POINTS.

F.F. = 441.68





MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY  
*Blue Ridge Regional Office*

3019 Peters Creek Road

Roanoke, VA 24019

SUBJECT: Site Visit, Nottoway County High School STP, Nottoway County

TO: File

FROM: Lewis Pillis 

DATE: January 9, 2012

COPIES:

Today, I visited tour the site. Since Mr. O'York was not present, Michael (Mitch) showed me around the site. He informed me that no chemicals are used in the chemistry lab. The polishing pond has not been used in 10 years. 2 chlorine tubes were in place. The dechlorination tank contained floating grease. He said that one of the schools was adding an enzymatic product to their cafeteria grease trap. I noted that this may be the cause of the floating grease in the STP. Twenty five pounds of lime are being added to the aeration tank 4 days/wk [M-Th] and 50 pounds on Friday. This is a temporary measure until a soda ash feeder is added. Esther was informed that the O&M Manual did not contain this information and needed to be revised.

At about 2:30 there was an effluent flow of about 2 gallons per minute. Esther said that yesterday that there was effluent flow of about 3 gpm at 5:00pm and about 0.5 gpm at 7:30 AM. Esther felt that they have continuous flow. There was also flow in the receiving stream, which was about 10 to 12 inches wide and an inch or two deep.

A sediment trap was present in the bus wash bay. It was 2' x 3' and 8 to 10 feet deep. It was said to have been cleaned out recently. Not many buses are washed in the winter, but about 12/week are washed when it is warm. A separator is present after the trap. It is 4' x 8'. No records of separator pumping or trap cleanout was available. There was a slow steady drip of water coming out of the separator and there was an odor from the separator as well. The storm water pond contained a lot of vegetative growth. The outlet was in need of erosion protection.

# VA DEQ Focused CEI Tech/Lab Inspection Report

Permit #

VA0061158

## LABORATORY DEFICIENCIES

**\*Continued from previous page.**

- 3. The December, 2013 DMR was reviewed. The following deficiencies were noted and an amended DMR must be submitted.**
- a. The flow is not reported correctly. The flow was reported as 0.0012 MGD. The correct flow should be 0.012 MGD.**
  - b. The reported concentrations for BOD<sub>5</sub> are not correct. The monthly average should be 18 mg/L and the maximum weekly average should be 32 mg/L.**
  - c. The reported loading for BOD<sub>5</sub> are not correct. The monthly average should be 0.8 kg/D and the maximum weekly average should be 1.5 kg/D.**
  - d. The reported concentrations for TSS are not correct. The monthly average should be 30 mg/L and the maximum weekly average should be 35 mg/L.**
  - e. The reported loading for TSS are not correct. The monthly average should be 1.4 kg/D and the maximum weekly average should be 1.6 kg/D.**
  - f. The frequency of analysis for BOD<sub>5</sub> & TSS are incorrect. Since 2 samples were collected for each parameters, it should have been reported as 2/M.**
  - g. The geometric mean for the E. Coli data was miscalculated. The data should have been reported as 6 N/CML. Additionally, it is not appropriate to report a decimal value for E. Coli data.**
  - h. The frequency of analysis for E. Coli is incorrect. Since 2 samples were collected, it should have been reported as 2/M.**

## NOTES and COMMENTS:

1. At the time of the inspection, facility staff were using HACH free chlorine DPD pillows. The day of the inspection, facility staff ordered the correct DPD pillows and acquired some from a neighboring municipality until their order could arrive.
2. Facility staff are working with the permit writer to finish the installation of the soda ash feed system and the appropriate revisions to the O & M Manual.



Nottoway County High  
Outfall 001 effluent data reported

VA0061158

Year	Month	FLOW, MGD		BOD <sub>5</sub>		TSS		AMMONIA	D. O.	
		Mo ave,	Max	kg/d	mg/L	kg/d	mg/L	Max	Minimum	
	<i>limit =&gt;</i>	<i>0.0256</i>		<i>2.3/3.5</i>	<i>24/36</i>	<i>2.9/4.4</i>	<i>30/45</i>	mg/L	mg/L	
2012	1	0.0131	0.0016	1	19	3.2	<b>61</b>	1.6	4.6	
	2	0.0115	0.013	0.9	21	1.7	37	6	6.1	
	3	0.012	0.012	1	22	1.7	37	7.1	4	
	4	0.0012	0.0012	1	21	1.3	29	14.5	5.2	
	5	0.0012	0.0012	0.27	6	0.5	11	<0.20	5.9	
	6	0.012	0.012	0.3	7	1.2	26	5.3	6.8	
	7	0.0012	0.0012	0.6	13	3.4	74	4.2	6.7	
	8	0.0012	0.0012	0.3	7	0.04	9	5.1	4.9	
	9	0.1809	0.1233	2.2	8	1.1	4	3	5.7	
	10	0.0372	0.0955	X	X	X	X	X	5.7	
	11	0.066	0.8522		0.5	5	0.5	5	2.7	7.8
	12	0.0159	0.0537	X	X	X	X	X		9.4
2013	1	0.0008	0.0033	0.0416	2	0.1041	5	0.64	6.1	
	2	0.0092	0.0436	0.391	12	1.107	<b>34</b>	3.1	6.2	
	3	0.0107	0.0718	0.148	6	0.32	13	0.34	6.1	
	4	0.0012	0.0012	0.64	14	0.1	22	5.4	7.2	
	5	0.0012	0.0012	0.55	12	0.45	10	7.5	7.9	
	6	0.0012	0.0012	0.23	5	0.27	6	11.7	6.2	
	7	0.0012	0.0012	0.5	11	0.4	9	1.5	6.2	
	8	0.0012	0.0012	0.36	8	0.45	10	1.2	7.2	
	9	0.0012	0.0012	0.3	7	0.3	6	1.6	6.2	
	10	0.0012	0.0012	0.1	2	0.1	3	3.8	6.8	
	11	0.0012	0.0012	0.3	7	0.1	2	4	5.8	
	12	0.012	0.012	0.8	<b>32</b>	1.6	30	5.9	6.8	
2014	1	0.0012	0.0012	0.1	2	0.4	10	3.5	6.1	
	2	0.012	0.012	0.6	15	0.9	25	<b>22.5</b>	6.2	
	3	0.012	0.012	0.4	8	1.1	24	5	6.1	
	4	0.012	0.012	0.3	6	0.4	9	7.2	6.1	
	5	0.012	0.012	0.6	14	0.6	13	8.2	7.4	
	6	0.012	0.012	0.9	2	0.2	16	2.2	6.2	
	7	0.012	0.012	0.5	10	0.2	5	0.9	5.1	
	8	0.012	0.012	0.1	2	0.1	2	0.2	6.2	
	9	0.012	0.012	0.2	5	0.2	4	8.6	6	
	10	0.012	0.012	0.3	7	0.2	4	6.8	6.1	
	11	0.012	0.012	0.7	15	0.3	6	3.4	6.1	
	12	0.012	0.012	0.09	2	0.05	1	0.29	<b>2</b>	
2015	1	0.012	0.012	0.09	2	0.05	1	< 0.2	6	
	2	0.012	0.012	0.09	2	0.05	1	0.88	6	
	3	0.012	0.012	0.09	2	0.05	1	< 0.2	6.1	
	4	0.012	0.012	0.1	2	0.1	1	< 0.2	6.1	
	5	0.012	0.012	0.09	2	0.05	1	< 0.2	6.4	
	6	0.012	0.012	0.09	2	0.05	1	< 0.2	6.1	
	7	0.012	0.012	0.09	2	0.01	1	< 0.2	6.4	
	8	0.012	0.012	0.09	2	0.05	1	< 0.2	6.1	
	9	0.012	0.012	0.09	2	0.05	1	< 0.2	6.1	

Flow erroneously reported prior to DEQ inspection

Nottoway County High  
Outfall 001 effluent data reported

VA0061158

Year	Month		TRC - 157	TRC - 213	TRC - 165		
			TOTAL	INST	INST RES	pH, SU	
		<i>E. coli</i>	CONTACT	TECH	MAX	min	max
		No/100 ml	mg/L	mg/L	ug/L		
		<i>limit =&gt;</i>	<i>1</i>	<i>0.6</i>	<i>12</i>		
2012	1		0.8	0.8	<QL	7	8.6
	2		1	1.0	<QL	7	8.1
	3		0.8	0.8	<QL	7.1	8.1
	4		1.7	1.7	<QL	7.4	7.9
	5	<b>1860</b>	<b>&lt;1</b>	1.7	<QL	7.4	7.9
	6	9.9	1.9	1.9	<QL	6.8	7.2
	7	7.8	1.3	1.3	<QL	6.5	7
	8	44.2	1	1.0	<QL	7.3	8
	9	117	0.8	0.8	<QL	7.5	7.8
	10	<b>154.6</b>	1	1.0	<QL	7	7.9
	11	9.6	1.2	1.2	<QL	7.5	8.1
	12	9.1	1.1	1.1	<QL	7.6	15.6
2013	1	2.8	1.1	1.1	<QL	7	8.1
	2	4.1	1	1.0	<QL	7	7.8
	3	18.4	1	1.0	<QL	7	8.1
	4	14.1	1	1.0	<QL	7.4	8.9
	5	4.4	1	1.0	<QL	7	8
	6	3	1	1.0	<QL	7	8.1
	7	60.2	1.2	1.2	<QL	7	7.8
	8	9.5	1.2	1.2	<QL	7	8.4
	9	69.8	1.2	1.2	<QL	7.2	8
	10	8.6	1.2	1.2	<QL	7	8.9
	11	29.3	1.2	1.2	<QL	7.1	8.1
	12	6	1.2	1.2	<QL	6.5	7.9
2014	1	1	1.2	1.2	<QL	7.2	7.9
	2	4	1	1.0	<QL	7	7.8
	3	2.1	1	1.0	<QL	7	8
	4	1.5	1.2	1.2	<QL	7.5	8.9
	5	2.6	1.1	1.1	<QL	7.2	8
	6	4.9	1	1.0	<QL	7	8
	7	90.3	1.2	1.2	<QL	7	7.9
	8	22	1.1	1.1	<QL	6.6	8
	9	11.9	1.1	1.1	<QL	7	<b>9</b>
	10	22.5	1.2	1.2	<QL	6.6	8.5
	11	66.2	1.2	1.2	<QL	6.7	7.9
	12	47.6	1.2	1.2	<QL	7	7.9
2015	1	2.1	1.1	1.1	<QL	6.7	8.5
	2	1	1	1.0	<QL	6.6	7.7
	3	1	1	1.0	<QL	7	8
	4	1	1	1.0	<QL	6.8	7.9
	5	1	1.1	1.1	<QL	7	7.9
	6	1	1	1.0	<QL	6.8	7.7
	7	1	1.1	1.1	<QL	6.8	7.9
	8	1	1	1.0	<QL	6.8	7.7
	9	1	1.3	1.3	<QL	6.8	7.7

DEQ inspn

Nottoway CO HS daily pH data

9/1/2014	10/1/2014	11/1/2014	12/1/2014	1/1/2015	2/1/2015	4/1/2015	5/1/2015	6/1/2015	7/1/2015	8/1/2015	9/1/2015
7.6	6.7	7.0	7.6	7.6	7.6	7.6	7.3	6.8	7.1	6.8	7.7
7.6	6.8	6.8	7.6	7.6	7.6	7.8	7.0	7.6	7.5	7.6	7.0
7.5	6.9	7.9	7.5	7.1	7.5	7.9	7.5	7.6	7.5	7.6	7.5
7.7	7.6	7.4	7.7	7.0	7.6	7.5	7.5	7.4	7.3	7.4	7.5
7.1	7.1	7.7	7.0	6.8	6.6	6.8	7.5	7.7	6.8	7.5	7.3
7.9	7.9	7.6	7.9	7.7	7.6	7.6	7.7	7.6	7.5	7.5	6.8
7.0	7.0	7.5	7.2	7.0	7.6	7.6	7.0	7.5	7.5	7.3	7.6
7.0	7.1	7.0	7.5	6.7	7.1	7.4	7.0	7.5	7.5	6.8	7.6
7.6	7.5	6.7	7.0	6.8	7.7	7.7	7.8	6.8	7.7	7.5	7.3
7.6	7.0	6.7	7.0	6.9	7.0	7.6	7.8	7.6	7.0	7.5	7.2
7.6	8.5	6.9	7.6	7.6	7.0	7.5	7.7	7.6	7.0	7.5	7.6
7.6	7.6	7.6	7.6	7.1	7.7	7.6	7.8	7.4	7.8	7.7	7.4
7.5	7.6	7.1	7.6	7.9	7.7	7.6	7.7	7.7	7.8	6.8	7.5
7.6	7.5	7.9	7.6	7.0		7.7	7.7	7.6	7.7	7.6	7.5
7.6	7.6	7.0	7.5	7.5		7.0	7.0	7.5	7.7	7.6	7.7
7.1	6.6	7.5		7.0		7.6	7.6	7.6	7.7	7.4	6.8
7.0	7.0	7.0		8.5		7.5	7.6	7.6	7.7	7.7	7.6
7.0	7.6						7.8	7.7	7.0	7.6	7.7
7.7	7.0						7.9	7.0	7.6	7.5	7.5
7.0	7.6						7.5	7.5	7.6	7.5	7.6
	7.1							7.5	7.8		
	7.9							7.3	7.9		
	7.5								7.5		

7.7 = 90%  
228 data points

Nottoway Co HS STP outfall 001

Daily temperature

max reported on DMR =>	22.8	27.2	11.1	21.1	20.1	25.6	21.6	22	19	22.9	20.7	21.9
	10/1/2014	11/1/2014	12/1/2014	1/1/2015	2/1/2015	3/1/2015	4/1/2015	5/1/2015	6/1/2015	7/1/2015	8/1/2015	9/1/2015
	19.8	21.7	21.4	19.1	21.4	23.1	16.8	15.6	21.4	27	21.4	23.2
	20.4	18.9	23.1	18.6	23.1	23	21.9	21.4	24.8	25.3	24.8	20.1
	20.2	23.5	29.7	21.7	29.7	28.9	23.5	25.3	26.4	26.4	26.4	15.8
	21.4	24.2	23	18.9	16.8	23.1	26.4	26.4	26.3	15.6	26.3	25.9
	21.8	23	22.2	23.2	22.4	29.1	21.4	25.9	21.1	21.4	25.3	25.9
	23.5	22.8	23.5	19.8	20.9	21.4	21.4	21.2	20.1	25.3	26.4	15.6
	21.7	23.3	15.8	19.8	19.1	32.2	24.8	30	23.1	26.4	15.6	21.4
	19.8	21.7	25.8	20.4	18.6	27.8	26.4	29.4	26.4	25.9	21.4	24.8
	29.7	19.8	22.2	20.2	21.9	15.3	26.3	17.8	21.4	21.2	25.3	26.4
	21.7	20.4	20.1	21.4	21.7	17.8	21.1	19	24.8	30	26.4	19.5
	15.8	20.2	15.8	21.8	29.4	30	20.1	18.9	26.4	29.4	25.9	20.1
	21.4	21.4	25.9	23.5	17.8	29.4	23.1	20	26.3	17.8	21.2	26.4
	23.1	21.8	23.7	21.7	26.1	28.2	16.9	21.8	21.1	19	21.4	26.3
	29.7	23.5	23.7	29.7		23.7	22	21.6	20.1	18.9	24.8	25.3
	16.8	21.7	29.7	21.7		23.7	23.2	20.1	23.1	20	26.4	26.4
	22.4	29.7		15.8		14.3	20.1	15.8	16.9	21.8	26.3	25.9
	20.1	21.7		21.4		16.8	15.8	16.8	22	21.6	21.1	21.2
	15.8					21.9		21.9	23.2	20.1	20.1	21.4
	21.7					23.5		23.5	20.1	15.8	23.1	24.8
	20.1					25.1		26.4	15.8	16.8	26.4	21.1
	21.8					29.7			25.9	21.9		
	23.5					23.6			15.6	23.5		
	25.1									26.4		

90% = 26.4

Jan-may 90%= 29.16

# APPENDIX B

Ambient STORET Data  
Flow Frequency Determination

## LITTLE NOTTOWAY RIVER

5ALNT004.68

RT. 626 BRIDGE

Collection_Date_Time	Field_pH	DO_Probe	Temp_Cels	Specific_C	Parameter_Parameter_Name	Value
<i>E. coli</i>						
10/7/2003	7.13	9.05	15	89	31648 E.COLI MTEC-MF NO/100ML	50
11/13/2003	6.98	9.6	12.85	91	31648 E.COLI MTEC-MF NO/100ML	240
12/8/2003	7.09	12.8	2.73	81	31648 E.COLI MTEC-MF NO/100ML	330

## Fecal coliform, MPN, EC med, 44.5 C

7/27/1994	6.74	6.8	23.1	--	31615 FEC COLIMPNECMED /100ML	16000 --
10/27/1994	6.91	10.37	7.71	--	31615 FEC COLIMPNECMED /100ML	330 --
1/24/1995	6.98	12.36	3.27	--	31615 FEC COLIMPNECMED /100ML	230 --
4/20/1995	7.04	8.83	16.53	132	31615 FEC COLIMPNECMED /100ML	330 --
7/24/1995	6.82	7.01	24.35	119	31615 FEC COLIMPNECMED /100ML	240 --
10/23/1995	6.85	10.07	10.52	113	31615 FEC COLIMPNECMED /100ML	490 --
1/18/1996	6.44	12.81	2.21	104	31615 FEC COLIMPNECMED /100ML	2200 --
4/11/1996	6.79	11.24	8.93	106	31615 FEC COLIMPNECMED /100ML	20 --
7/17/1996	6.68	6.74	23.79	126	31615 FEC COLIMPNECMED /100ML	220 --
10/16/1996	6.63	8.32	14.06	91	31615 FEC COLIMPNECMED /100ML	200 --
1/14/1997	6.42	13.5	0.13	99	31615 FEC COLIMPNECMED /100ML	230 --
4/8/1997	6.82	9.97	13.81	95	31615 FEC COLIMPNECMED /100ML	170 --
8/12/1997	7.24	8.43	22.31	116	31615 FEC COLIMPNECMED /100ML	2400 --
10/16/1997	7.22	9.11	13.34	120	31615 FEC COLIMPNECMED /100ML	130 --
12/17/1997	7.03	13.27	0.85	136	31615 FEC COLIMPNECMED /100ML	78 --
2/23/1998	6.79	11.37	7.93	73	31615 FEC COLIMPNECMED /100ML	16000 L
4/21/1998	6.95	9.43	14.5	67	31615 FEC COLIMPNECMED /100ML	700 --
6/24/1998 --	--	--	--	--	31615 FEC COLIMPNECMED /100ML	140 --
8/25/1998	7.19	7.37	25.6	112	31615 FEC COLIMPNECMED /100ML	2800 --
10/29/1998	6.93	9.11	11.27	137	31615 FEC COLIMPNECMED /100ML	480 --
12/17/1998	6.77	11.88	4.02	122	31615 FEC COLIMPNECMED /100ML	170 --
2/17/1999	6.75	11.37	6.63	108	31615 FEC COLIMPNECMED /100ML	330 --
4/22/1999	6.81	9.06	18.07	97	31615 FEC COLIMPNECMED /100ML	330 --
6/16/1999	6.8	8.63	20.78	115	31615 FEC COLIMPNECMED /100ML	1700 --
8/16/1999	7.26	7.98	26.51	112	31615 FEC COLIMPNECMED /100ML	170 --
10/21/1999	6.46	8.77	13.93	91	31615 FEC COLIMPNECMED /100ML	3500 --
12/27/1999	6.43	13.4	2.02	109	31615 FEC COLIMPNECMED /100ML	700 --

L = Off-Scale High/Actual Val Not Shown, Known to Be &gt; Val Shown


# MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY  
*South Central Regional Office - Water Planning*  
7705 Timberlake Road Lynchburg, VA 24502 434/582-5120

---

**SUBJECT:** Flow Frequency Determination  
Nottoway County Schools – Nottoway County High School STP #VA0061158

**TO:** Kirk Batsel

**FROM:** Amanda Gray 

**DATE:** June 2, 2006

**COPIES:** File

The Nottoway County Senior High School STP discharges to an unnamed tributary to the Little Nottoway River in Nottoway County, Virginia. Flow frequencies are required at this site for use by the permit writer in developing the VPDES permit.

The flow frequencies for the receiving stream were determined by inspection of the USGS Blackstone West Quadrangle topographic map. The map depicts the receiving stream as intermittent. The flow frequencies for intermittent streams are 0.0 cfs for the 1Q10, 7Q10, 30Q5, 30Q10, HF1Q10, HF7Q10, HF30Q10 and harmonic mean.

If you have any questions regarding this analysis please feel free to contact me.

***Planning Statement for VPDES Permit Application Processing  
DEQ-SCRO***

VPDES	OwnerName	Facility	County
VA0061158	Nottoway County Schools	Nottoway County High School STP	Nottoway

**Outfall #:** 002

**River Basin:** Chowan and Dismal Swamp

**Receiving Stream:** *Stream Code: X6N*  
UT, UT to Little Nottoway River (XGM)

**Subbasin:** Chowan River Basin

**Watershed Code:** K15R

**River Mile:** 0.45

	MGD		MGD
1Q10	0	HF 1Q10	0
7Q10	0	HF7Q10	0
30Q5	0	HF30Q10	0
30Q10	0	HM	0

**Modeling Notes**


**WQMP Name** Chowan '82

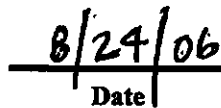
**Statement** No Allocations Set

**TMDL ID** None

**Impairment Cause**

**TMDL Due Date**

  
Amanda B. Gray, Water Planning Engineer

  
Date



**MEMORANDUM  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
Piedmont Regional Office**

4900 Cox Road    Glen Allen, VA 23060    804/527-5020

**SUBJECT:**    Nottoway HS STP, VA0061158

**TO:**    File

**COPY TO:**    Nottoway County Schools

**FROM:**    Kyle Ivar Winter, P.E. *KIW*

**DATE:**    October 25, 1996

The permit for the referenced facility is being drafted; the ammonia limits (and consequent schedule of compliance) are based on a receiving stream 7Q10 of zero.

The permittee requested an evaluation of Tank Pond Branch upstream of the discharge point. This request was based on two assertions:

- 1)    Several springs feed Tank Pond Branch year-round and the stream is incorrectly designated as intermittent on the USGS topo and
- 2)    The flow is of sufficient magnitude that steam locomotives were able to resupply their water from a dammed area of the stream.

I requested a flow frequency analysis from headquarters; I specified that the analysis be performed as for a perennial stream. The analysis showed that given the drainage area, the instream wastewater concentration (IWC) would be heavily effluent dominated. However, this analysis did not account for springs in the drainage area.

On October 16th, I walked the stream with Robert Davis and Michael Armes of the School District. The flow about 100' upstream of the discharge point was estimated at 0.027 MGD using rough estimates of the stream width, depth and velocity. The ground in the vicinity of Tank Pond Branch was saturated; given the recent precipitation (several tropical storms and heavy rains since Labor Day), this would not be expected in 7Q10 conditions. Several unnamed tributaries to Tank Pond Branch were traced and were all dry ditches at the origin. Two areas that appeared to be springs were noted; however, the water seeping from them would not be expected to support a perennial stream.

I estimated the flow where Tank Pond Branch crosses Business Rt. 460 (300' upstream of the discharge point) at between .035 and .05 MGD using the Manning formula; it should be noted that none of these flow estimates used precise measurements, and the Manning estimates in particular are suspect because estimating the slope of the pipe run under Business 460 leads to a broad range of possible flow values. I mention these flow estimates only to show that during an abnormally rainy summer, the IWC would not be significantly stream dominated. Under drought conditions, I do not expect the stream to be flowing.

The "tank pond" was found near the railroad track; the earthen dam was breached and the area upstream was a seep that served as the headwaters of the stream. I estimated the volume of the "pond" at 7000 gallons; overflow from the dam was probably not enough to support a perennial stream.

I am continuing permit processing using a 7Q10 of zero.

# APPENDIX C

Dissolved oxygen model  
STATS.exe printouts  
WLA spreadsheet

# MEMORANDUM

## State Water Control Board

2111 North Hamilton Street

P. O. Box 11143

Richmond, VA. 23230

SUBJECT: NPDES EFFLUENT LIMITS FOR NOTTOWAY SENIOR HIGH SCHOOL

TO: File

FROM: Drun-sun Lee *D.S.L.*

DATE: January 6, 1976

COPIES: J. K. Bailey

### STREAM SANITATION ANALYSIS

#### PROPOSED DISCHARGE

##### Process:

Hydraulic Load	<u>0.0256</u>	MGD	
Raw Sewage BOD <sub>5</sub>	<u>240</u>	mg/l;	<u>          </u> lbs/day
Degree of Treatment	<u>          </u>	%	
Final Effluent BOD <sub>5</sub>	<u>          </u>	mg/l;	<u>          </u> lbs/day

#### RECEIVING STREAM

Name: Tributary to Nottoway River  
Basin: Chowan River and Dismal Swamp  
Sub-Basin: Chowan River

Stream Uses (Subclass A): Waters generally satisfactory for use as public or municipal water supply, secondary contact recreation, propagation of fish and aquatic life, and other beneficial uses.

Coliform Organisms - Fecal coliforms (multiple-tube fermentation or MF count) not to exceed a log mean of 1000/100 ml. No to equal or exceed 2000/100 ml. in more than 10% of samples.

Monthly average value not more than 5000/100 ml. (MPN or MF count). Not more than 5000 MPN/100 ml. in more than 20% of samples in any month. Not more than 20,000/100 ml. in more than 5% of such samples.

#### Stream Standards:

Minimum D.O.	<u>4.0</u>	mg/l	Daily Average	<u>5.0</u>	mg/l
pH Range	<u>6.0-8.5</u>				
Temperature	<u>50°F rise above natural</u>				
	<u>90°F maximum</u>				

Comments:

The tributary is a dry ditch under drought conditions.

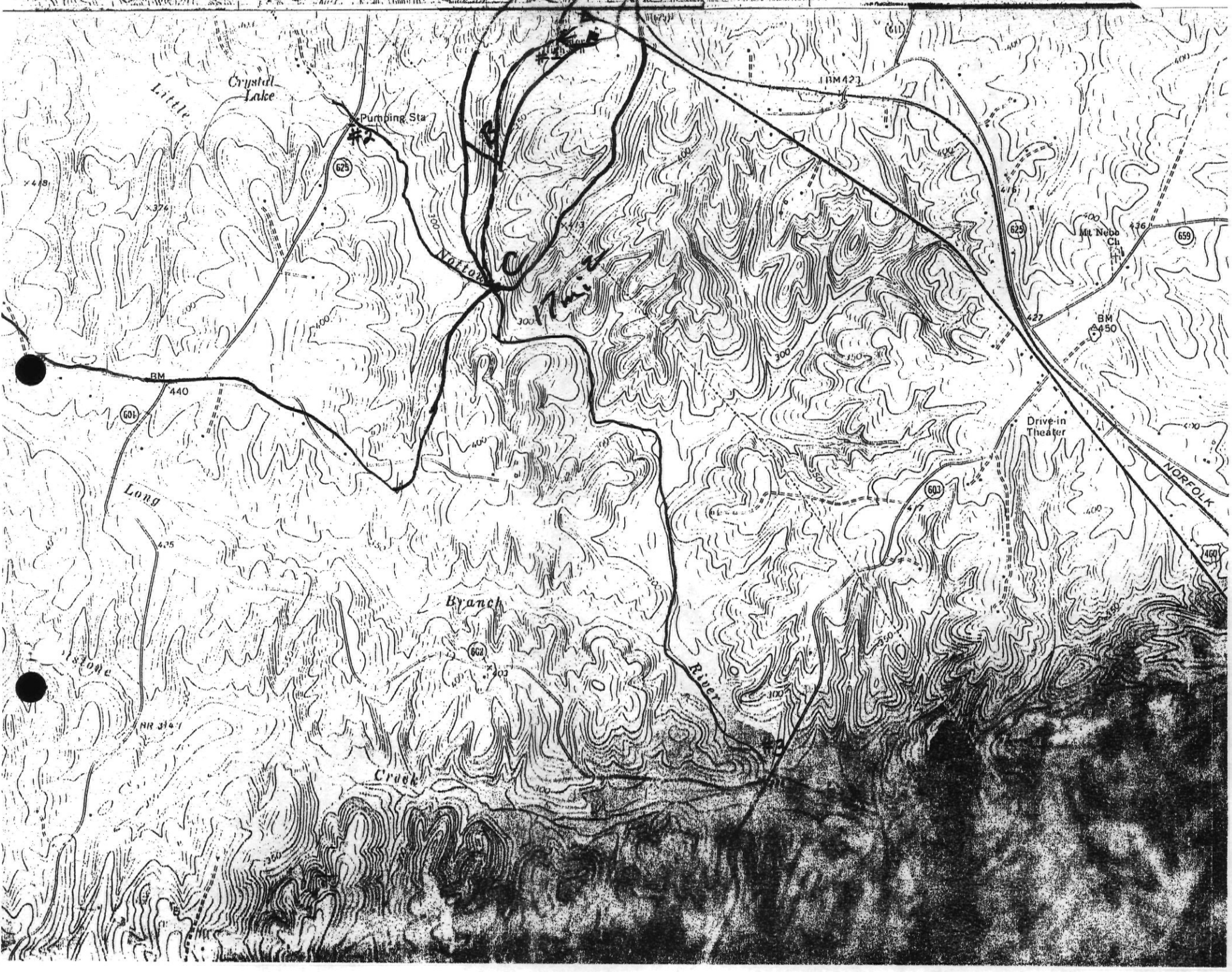
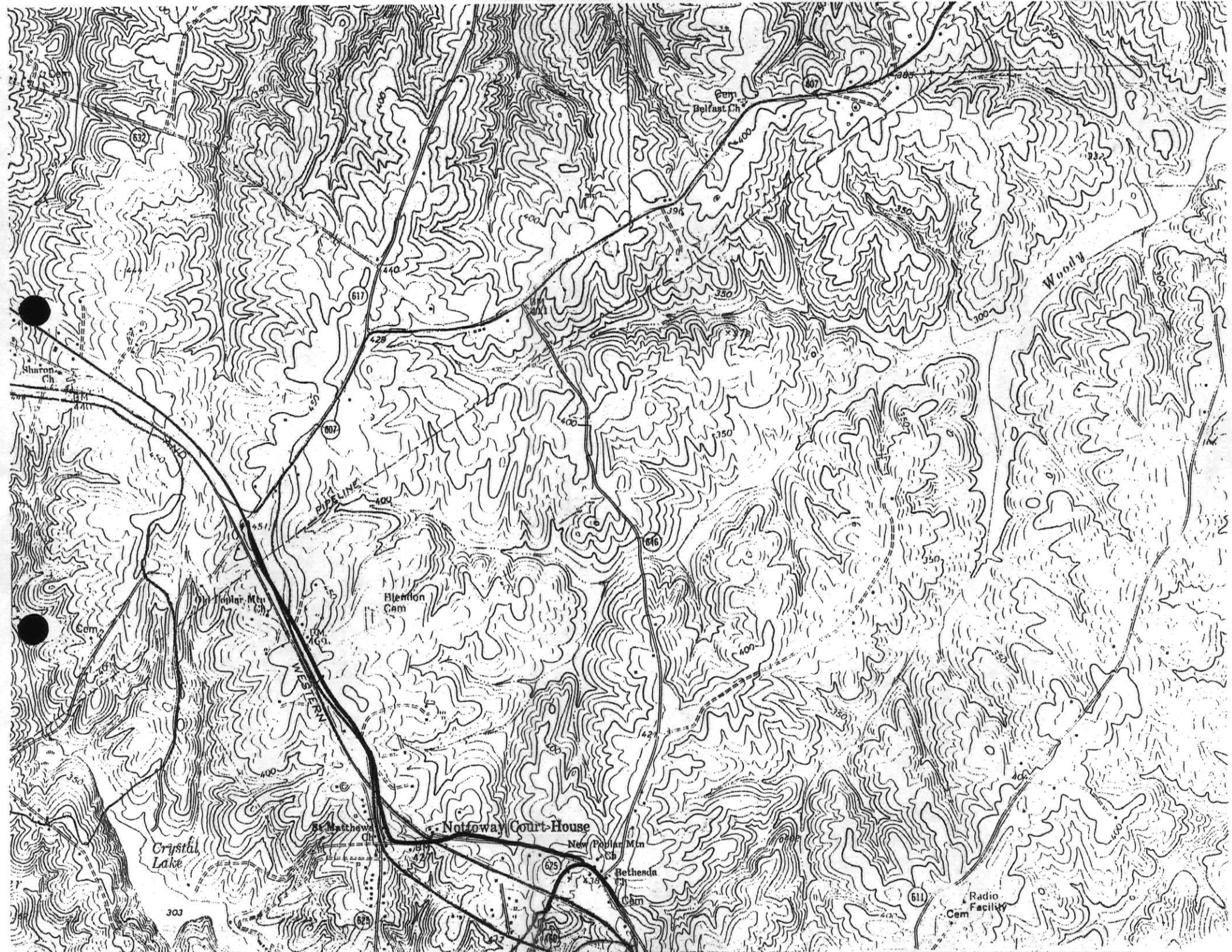
1. BOD<sub>5</sub> - 24 mg/l
2. Suspended Solids - 24 mg/l
3. D.O. - 5.6 mg/l
4. Flow - 0.0256 MGD

Non-degradation policy of the Law (memo dated September 9, 1971, from LGL) was not applied.

If the plant meets the above requirements, the water quality standards will be maintained.

/cbw







BR (19)  $D_e = 2.0000 \text{ mg/L}$   $\downarrow$   $\sigma$

$Q_T = 0.0000 \text{ cfs}$

$L_T = 0.0000 \text{ mg/L}$

$U = 0.8000 \text{ fps}$

$D_T = 0.8500 \text{ mg/L}$

1  $BOD_{45} = 1.5000$

Eff  $BOD_{45} = 0.0000 \text{ mg/L}$

$Q_c = 0.0256 \text{ mgd}$

0.0396

45.0000

0.0396

45.0036

BR (39)  $2.0000$   $\uparrow$   $\sigma$

$D_{max} = 2.0000 \text{ mg/L}$

$U = 0.8000 \text{ fps}$

$K_1 = 0.3000 \text{ day}^{-1}$ , Base e

$K_2 = 1.2000 \text{ day}^{-1}$ , Base e

BR (41)  $X = 1.0000 \text{ mi}$

0.0764

4.0000

2.7990

43.9538

BR (19)  $2.0000$   $\downarrow$   $\sigma$

0.0000

0.0000

0.8000

0.8500

1.5000

Eff  $BOD_{45} = 23.0000$

0.0256

0.0396

Trial 2  $42.0000$

0.0396

42.0034

BR (39)  $2.0000$   $\uparrow$   $\sigma$

2.0000

0.8000

0.3000

1.2000

BR (41)  $0.5000$

0.0382

4.0000

2.3782

41.5248

0.2000

0.0153

4.0000

2.5234

41.3346

0.3000

0.0229

4.0000

2.7341

41.0516

BR (19)  $2.0000$   $\downarrow$   $\sigma$

0.0000

0.0000

0.8000

0.8500

1.5000

Eff  $BOD_{45} = 20.0000$

0.0256

BR (19)  $2.0000$   $\downarrow$   $\sigma$

0.0000

0.0000

0.8000

0.8500

1.5000

Eff  $BOD_{45} = 24.0000$

0.0256

0.0396

Trial 4  $36.0000$

0.0396

36.0029

BR (39)  $2.0000$   $\uparrow$   $\sigma$

2.0000

0.8000

0.3000

1.2000

BR (41)  $1.0000$

0.0764

4.0000

2.6042

35.1871

BR (30)  $U = 0.7000 \text{ fps}$

$D_T = 0.8500 \text{ mg/L}$

$L_T = 2.0000 \text{ mg/L}$

Area (ft)  $640.0000 \text{ acres}$

$7Q10 = 0.1000 \text{ cfs/mi}^2$

0.1396

11.4141

1.3476

BR (19)  $D_e = 2.0000$   $\downarrow$   $\sigma$

$Q_T = 0.0000$

$L_T = 0.0000$

$U = 0.8000$

$D_T = 0.8500$

$BOD_{45} = 1.5000$

Eff  $BOD_{45} = 24.0000$

$Q_c = 0.0256$

0.0396

36.0000

Q<sub>7,10</sub>  $0.0396$

from 0.1  $36.0029$

to 0.2  $2.0000$

CF5  $D_{max} = 2.0000$

$U = 0.8000$

$K_1 = 0.3000$

$K_2 = 1.2000$

BR (41)  $X = 1.0000$

0.0764

4.0000

2.6042

35.1871

$DO = 7.6$   
 $\frac{7.6}{5.0} \rightarrow$

Q<sub>7,10</sub>  $BR(30) U = 0.7000$

$D_T = 0.8500$

$L_T = 2.0000$

Area (ft)  $640.0000$

$7Q10 = 0.2000$

0.2396

7.4950

1.1399

Original Not Legible

BR (19)  $D_0 = 2.0000$  mg/l  $\downarrow$   $\sigma$

$Q_T = 0.0000$  cfs

$L_T = 0.0000$  mg/l

$U = 0.8000$  fps

$D_T = 0.8500$  mg/l

1  $BOD_{1/5} = 1.5000$

Eff  $BOD_5 = 0.0000$  mg/l

$Q_c = 0.0256$  mg/d

$0.0396$

$45.0000$

$0.0396$  A

$45.0036$  A

BR (39)  $2.0000$   $\downarrow$   $\sigma$

$D_{mix} = 2.0000$  mg/l

$U = 0.8000$  fps

$K_1 = 0.3000$  day<sup>-1</sup>, Base e

$K_2 = 1.2000$  day<sup>-1</sup>, Base e

BR (41)  $X = 1.0000$  m

$0.0764$  A

$4.0000$  A

$2.7990$  A

$43.3538$  A

BR (19)  $2.0000$   $\downarrow$   $\sigma$

$0.0000$

$0.0000$

$0.8000$

$0.8500$

$1.5000$

Eff  $BOD_5 = 28.0000$

$0.0256$

$0.0396$

Trial 2  $42.0000$

$0.0396$  A

$42.0034$  A

BR (39)  $2.0000$   $\downarrow$   $\sigma$

$2.0000$

$0.8000$

$0.3000$

$1.2000$

BR (41)  $0.5000$

$0.0382$  A

$4.0000$  A

$2.3782$  A

$41.5248$  A

$0.2000$

$0.0153$  A

$4.0000$  A

$2.5234$  A

$41.3346$  A

$0.3000$

$0.0229$  A

$4.0000$  A

$2.7341$  A

$41.0516$  A

BR (19)  $2.0000$   $\downarrow$   $\sigma$

$0.0000$

$0.0000$

$0.8000$

$0.8500$

$1.5000$

Eff  $BOD_5 = 20.0000$

$0.0256$

BR (19)  $2.0000$

$0.0000$

$0.0000$

$0.8000$

$0.8500$

$1.5000$

Eff  $BOD_5 = 24.0000$

$0.0256$

$0.0396$

Trial 4  $36.0000$

$0.0396$  A

$36.0029$  A

BR (39)  $2.0000$   $\downarrow$   $\sigma$

$2.0000$

$0.8000$

$0.3000$

$1.2000$

BR (41)  $1.0000$

$0.0764$  A

$4.0000$  A

$2.6042$  A

$35.1871$  A

BR (30)  $U = 0.7000$  fps

$D_T = 0.0500$  mg/l

$L_T = 2.0000$  mg/l

Area  $\times 540.0000$  acres

$7Q_{10} = 0.1000$  cfs/m<sup>2</sup>

$0.1396$  A

$11.4141$  A

$1.3476$   $\downarrow$   $\sigma$

BR (19)  $D_0 = 2.0000$   $\downarrow$   $\sigma$

$Q_T = 0.0000$

$L_T = 0.0000$

$U = 0.8000$

$D_T = 0.8500$

$BOD_{1/5} = 1.5000$

Eff  $BOD_5 = 24.0000$

$Q_c = 0.0256$

$0.0396$

$36.0000$

Adjust  $Q_{T,10} = 0.0396$  A

$36.0029$  A

from 0.1  $BOD_{1/5} = 2.0000$   $\downarrow$   $\sigma$

to 0.2  $D_{mix} = 2.0000$

cfs  $U = 0.8000$

$K_1 = 0.3000$

$K_2 = 1.2000$

BR (41)  $X = 1.0000$

$0.0764$  A

$4.0000$  A

$2.6042$  A

$35.1871$  A

$DO = 7.6$

$\frac{-3.6}{5.0}$

$\therefore Q_K$

BR (30)  $U = 0.7000$

$D_T = 0.8500$

$L_T = 2.0000$

Area  $\times 540.0000$

$7Q_{10} = 0.2000$

$0.2396$  A

$7.4850$  A

$1.1399$   $\downarrow$   $\sigma$

**MEMORANDUM  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
Piedmont Regional Office**

4900 Cox Road    Glen Allen, VA 23060    804/527-5020

**SUBJECT:**     Nottoway HS STP, VA0061158

**TO:**            File

**COPY TO:**    Nottoway County Schools

**FROM:**        Kyle Ivar Winter, P.E. *KIW*

**DATE:**        October 25, 1996

The permit for the referenced facility is being drafted; the ammonia limits (and consequent schedule of compliance) are based on a receiving stream 7Q10 of zero.

The permittee requested an evaluation of Tank Pond Branch upstream of the discharge point. This request was based on two assertions:

- 1)        Several springs feed Tank Pond Branch year-round and the stream is incorrectly designated as intermittent on the USGS topo and
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I am continuing permit processing using a 7Q10 of zero.



4/7/2016 11:28:16 AM

Facility = Nottoway HS STP  
Chemical = ammonia  
Chronic averaging period = 30  
WLAa = 12.1  
WLAc = 1.48  
Q.L. = 0.2  
# samples/mo. = 1  
# samples/wk. = 1

Summary of Statistics:

# observations = 1  
Expected Value = 9  
Variance = 29.16  
C.V. = 0.6  
97th percentile daily values = 21.9007  
97th percentile 4 day average = 14.9741  
97th percentile 30 day average = 10.8544  
# < Q.L. = 0  
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity  
Maximum Daily Limit = 2.98615173825614  
Average Weekly limit = 2.98615173825614  
Average Monthly Limit = 2.98615173825614

The data are:

4/7/2016 11:51:59 AM

Facility = Nottoway HS STP  
Chemical = TRC  
Chronic averaging period = 4  
WLAa = 19  
WLAc = 11  
Q.L. = .1  
# samples/mo. = 20  
# samples/wk. = 5

Summary of Statistics:

# observations = 1  
Expected Value = 200  
Variance = 14400  
C.V. = 0.6  
97th percentile daily values = 486.683  
97th percentile 4 day average = 332.758  
97th percentile 30 day average = 241.210  
# < Q.L. = 0  
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity  
Maximum Daily Limit = 16.0883226245855  
Average Weekly limit = 10.4856981213764  
Average Monthly Limit = 8.27988368416625

The data are:

200

# FRESHWATER WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Nottoway HS STP outfall 001

Permit No.: VA0061158

Receiving Stream: UT Little Nottoway River

Version: OWP Guidance Memo 00-2011 (8/24/00)

## Stream Information

Mean Hardness (as CaCO3) =	80 mg/L
90% Temperature (Annual) =	25 deg C
90% Temperature (Wet season) =	25 deg C
90% Maximum pH =	7.7 SU
10% Maximum pH =	7 SU
Tier Designation (1 or 2) =	2
Public Water Supply (PWS) Y/N? =	n
Trout Present Y/N? =	n
Early Life Stages Present Y/N? =	y

## Stream Flows

1Q10 (Annual) =	0 MGD
7Q10 (Annual) =	0 MGD
30Q10 (Annual) =	0 MGD
1Q10 (Wet season) =	0 MGD
30Q10 (Wet season) =	0 MGD
30Q5 =	0 MGD
Harmonic Mean =	0 MGD

## Mixing Information

Annual - 1Q10 Mix =	100 %
- 7Q10 Mix =	100 %
- 30Q10 Mix =	100 %
Wet Season - 1Q10 Mix =	100 %
- 30Q10 Mix =	100 %

## Effluent Information

Mean Hardness (as CaCO3) =	50 mg/L
90% Temp (Annual) =	26.4 deg C
90% Temp (Wet season) =	29.2 deg C
90% Maximum pH =	7.8 SU
10% Maximum pH =	7 SU
Discharge Flow =	0.0256 MGD

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Acenaphthene	0	--	--	na	9.9E+02	--	--	na	9.9E+02	--	--	na	9.9E+01	--	--	na	9.9E+01	--	--	na	9.9E+01
Acrolein	0	--	--	na	9.3E+00	--	--	na	9.3E+00	--	--	na	9.3E-01	--	--	na	9.3E-01	--	--	na	9.3E-01
Acrylonitrile <sup>C</sup>	0	--	--	na	2.5E+00	--	--	na	2.5E+00	--	--	na	2.5E-01	--	--	na	2.5E-01	--	--	na	2.5E-01
Aldrin <sup>C</sup>	0	3.0E+00	--	na	5.0E-04	3.0E+00	--	na	5.0E-04	7.5E-01	--	na	5.0E-05	7.5E-01	--	na	5.0E-05	7.5E-01	--	na	5.0E-05
Ammonia-N (mg/l) (Yearly)	0	1.21E+01	1.48E+00	na	--	1.21E+01	1.48E+00	na	--	3.03E+00	3.70E-01	na	--	3.03E+00	3.70E-01	na	--	3.03E+00	3.70E-01	na	--
Ammonia-N (mg/l) (High Flow)	0	1.21E+01	1.23E+00	na	--	1.21E+01	1.23E+00	na	--	3.03E+00	3.09E-01	na	--	3.03E+00	3.09E-01	na	--	3.03E+00	3.09E-01	na	--
Anthracene	0	--	--	na	4.0E+04	--	--	na	4.0E+04	--	--	na	4.0E+03	--	--	na	4.0E+03	--	--	na	4.0E+03
Antimony	0	--	--	na	6.4E+02	--	--	na	6.4E+02	--	--	na	6.4E+01	--	--	na	6.4E+01	--	--	na	6.4E+01
Arsenic	0	3.4E+02	1.5E+02	na	--	3.4E+02	1.5E+02	na	--	8.5E+01	3.8E+01	na	--	8.5E+01	3.8E+01	na	--	8.5E+01	3.8E+01	na	--
Barium	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Benzene <sup>C</sup>	0	--	--	na	5.1E+02	--	--	na	5.1E+02	--	--	na	5.1E+01	--	--	na	5.1E+01	--	--	na	5.1E+01
Benzidine <sup>C</sup>	0	--	--	na	2.0E-03	--	--	na	2.0E-03	--	--	na	2.0E-04	--	--	na	2.0E-04	--	--	na	2.0E-04
Benzo (a) anthracene <sup>C</sup>	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	na	1.8E-02	--	--	na	1.8E-02	--	--	na	1.8E-02
Benzo (b) fluoranthene <sup>C</sup>	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	na	1.8E-02	--	--	na	1.8E-02	--	--	na	1.8E-02
Benzo (k) fluoranthene <sup>C</sup>	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	na	1.8E-02	--	--	na	1.8E-02	--	--	na	1.8E-02
Benzo (a) pyrene <sup>C</sup>	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	na	1.8E-02	--	--	na	1.8E-02	--	--	na	1.8E-02
Bis2-Chloroethyl Ether <sup>C</sup>	0	--	--	na	5.3E+00	--	--	na	5.3E+00	--	--	na	5.3E-01	--	--	na	5.3E-01	--	--	na	5.3E-01
Bis2-Chloroisopropyl Ether	0	--	--	na	6.5E+04	--	--	na	6.5E+04	--	--	na	6.5E+03	--	--	na	6.5E+03	--	--	na	6.5E+03
Bis 2-Ethylhexyl Phthalate <sup>C</sup>	0	--	--	na	2.2E+01	--	--	na	2.2E+01	--	--	na	2.2E+00	--	--	na	2.2E+00	--	--	na	2.2E+00
Bromoform <sup>C</sup>	0	--	--	na	1.4E+03	--	--	na	1.4E+03	--	--	na	1.4E+02	--	--	na	1.4E+02	--	--	na	1.4E+02
Butylbenzylphthalate	0	--	--	na	1.9E+03	--	--	na	1.9E+03	--	--	na	1.9E+02	--	--	na	1.9E+02	--	--	na	1.9E+02
Cadmium	0	1.8E+00	6.6E-01	na	--	1.8E+00	6.6E-01	na	--	4.5E-01	1.6E-01	na	--	4.5E-01	1.6E-01	na	--	4.5E-01	1.6E-01	na	--
Carbon Tetrachloride <sup>C</sup>	0	--	--	na	1.6E+01	--	--	na	1.6E+01	--	--	na	1.6E+00	--	--	na	1.6E+00	--	--	na	1.6E+00
Chlordane <sup>C</sup>	0	2.4E+00	4.3E-03	na	8.1E-03	2.4E+00	4.3E-03	na	8.1E-03	6.0E-01	1.1E-03	na	8.1E-04	6.0E-01	1.1E-03	na	8.1E-04	6.0E-01	1.1E-03	na	8.1E-04
Chloride	0	8.6E+05	2.3E+05	na	--	8.6E+05	2.3E+05	na	--	2.2E+05	5.8E+04	na	--	2.2E+05	5.8E+04	na	--	2.2E+05	5.8E+04	na	--
TRC	0	1.9E+01	1.1E+01	na	--	1.9E+01	1.1E+01	na	--	4.8E+00	2.8E+00	na	--	4.8E+00	2.8E+00	na	--	4.8E+00	2.8E+00	na	--
Chlorobenzene	0	--	--	na	1.6E+03	--	--	na	1.6E+03	--	--	na	1.6E+02	--	--	na	1.6E+02	--	--	na	1.6E+02

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane <sup>C</sup>	0	--	--	na	1.3E+02	--	--	na	1.3E+02	--	--	na	1.3E+01	--	--	na	1.3E+01	--	--	na	1.3E+01
Chloroform	0	--	--	na	1.1E+04	--	--	na	1.1E+04	--	--	na	1.1E+03	--	--	na	1.1E+03	--	--	na	1.1E+03
2-Chloronaphthalene	0	--	--	na	1.6E+03	--	--	na	1.6E+03	--	--	na	1.6E+02	--	--	na	1.6E+02	--	--	na	1.6E+02
2-Chlorophenol	0	--	--	na	1.5E+02	--	--	na	1.5E+02	--	--	na	1.5E+01	--	--	na	1.5E+01	--	--	na	1.5E+01
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	8.3E-02	4.1E-02	na	--	2.1E-02	1.0E-02	na	--	2.1E-02	1.0E-02	na	--	2.1E-02	1.0E-02	na	--
Chromium III	0	3.2E+02	4.2E+01	na	--	3.2E+02	4.2E+01	na	--	8.1E+01	1.1E+01	na	--	8.1E+01	1.1E+01	na	--	8.1E+01	1.1E+01	na	--
Chromium VI	0	1.6E+01	1.1E+01	na	--	1.6E+01	1.1E+01	na	--	4.0E+00	2.8E+00	na	--	4.0E+00	2.8E+00	na	--	4.0E+00	2.8E+00	na	--
Chromium, Total	0	--	--	1.0E+02	--	--	--	na	--	--	--	1.0E+01	--	--	--	1.0E+01	--	--	--	na	--
Chrysene <sup>C</sup>	0	--	--	na	1.8E-02	--	--	na	1.8E-02	--	--	na	1.8E-03	--	--	na	1.8E-03	--	--	na	1.8E-03
Copper	0	7.0E+00	5.0E+00	na	--	7.0E+00	5.0E+00	na	--	1.7E+00	1.2E+00	na	--	1.7E+00	1.2E+00	na	--	1.7E+00	1.2E+00	na	--
Cyanide, Free	0	2.2E+01	5.2E+00	na	1.6E+04	2.2E+01	5.2E+00	na	1.6E+04	5.5E+00	1.3E+00	na	1.6E+03	5.5E+00	1.3E+00	na	1.6E+03	5.5E+00	1.3E+00	na	1.6E+03
DDD <sup>C</sup>	0	--	--	na	3.1E-03	--	--	na	3.1E-03	--	--	na	3.1E-04	--	--	na	3.1E-04	--	--	na	3.1E-04
DDE <sup>C</sup>	0	--	--	na	2.2E-03	--	--	na	2.2E-03	--	--	na	2.2E-04	--	--	na	2.2E-04	--	--	na	2.2E-04
DDT <sup>C</sup>	0	1.1E+00	1.0E-03	na	2.2E-03	1.1E+00	1.0E-03	na	2.2E-03	2.8E-01	2.5E-04	na	2.2E-04	2.8E-01	2.5E-04	na	2.2E-04	2.8E-01	2.5E-04	na	2.2E-04
Demeton	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	2.5E-02	na	--	--	2.5E-02	na	--	--	2.5E-02	na	--
Diazinon	0	1.7E-01	1.7E-01	na	--	1.7E-01	1.7E-01	na	--	4.3E-02	4.3E-02	na	--	4.3E-02	4.3E-02	na	--	4.3E-02	4.3E-02	na	--
Dibenz(a,h)anthracene <sup>C</sup>	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	na	1.8E-02	--	--	na	1.8E-02	--	--	na	1.8E-02
1,2-Dichlorobenzene	0	--	--	na	1.3E+03	--	--	na	1.3E+03	--	--	na	1.3E+02	--	--	na	1.3E+02	--	--	na	1.3E+02
1,3-Dichlorobenzene	0	--	--	na	9.6E+02	--	--	na	9.6E+02	--	--	na	9.6E+01	--	--	na	9.6E+01	--	--	na	9.6E+01
1,4-Dichlorobenzene	0	--	--	na	1.9E+02	--	--	na	1.9E+02	--	--	na	1.9E+01	--	--	na	1.9E+01	--	--	na	1.9E+01
3,3-Dichlorobenzidine <sup>C</sup>	0	--	--	na	2.8E-01	--	--	na	2.8E-01	--	--	na	2.8E-02	--	--	na	2.8E-02	--	--	na	2.8E-02
Dichlorobromomethane <sup>C</sup>	0	--	--	na	1.7E+02	--	--	na	1.7E+02	--	--	na	1.7E+01	--	--	na	1.7E+01	--	--	na	1.7E+01
1,2-Dichloroethane <sup>C</sup>	0	--	--	na	3.7E+02	--	--	na	3.7E+02	--	--	na	3.7E+01	--	--	na	3.7E+01	--	--	na	3.7E+01
1,1-Dichloroethylene	0	--	--	na	7.1E+03	--	--	na	7.1E+03	--	--	na	7.1E+02	--	--	na	7.1E+02	--	--	na	7.1E+02
1,2-trans-dichloroethylene	0	--	--	na	1.0E+04	--	--	na	1.0E+04	--	--	na	1.0E+03	--	--	na	1.0E+03	--	--	na	1.0E+03
2,4-Dichlorophenol	0	--	--	na	2.9E+02	--	--	na	2.9E+02	--	--	na	2.9E+01	--	--	na	2.9E+01	--	--	na	2.9E+01
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
1,2-Dichloropropane <sup>C</sup>	0	--	--	na	1.5E+02	--	--	na	1.5E+02	--	--	na	1.5E+01	--	--	na	1.5E+01	--	--	na	1.5E+01
1,3-Dichloropropene <sup>C</sup>	0	--	--	na	2.1E+02	--	--	na	2.1E+02	--	--	na	2.1E+01	--	--	na	2.1E+01	--	--	na	2.1E+01
Dieldrin <sup>C</sup>	0	2.4E-01	5.6E-02	na	5.4E-04	2.4E-01	5.6E-02	na	5.4E-04	6.0E-02	1.4E-02	na	5.4E-05	6.0E-02	1.4E-02	na	5.4E-05	6.0E-02	1.4E-02	na	5.4E-05
Diethyl Phthalate	0	--	--	na	4.4E+04	--	--	na	4.4E+04	--	--	na	4.4E+03	--	--	na	4.4E+03	--	--	na	4.4E+03
2,4-Dimethylphenol	0	--	--	na	8.5E+02	--	--	na	8.5E+02	--	--	na	8.5E+01	--	--	na	8.5E+01	--	--	na	8.5E+01
Dimethyl Phthalate	0	--	--	na	1.1E+06	--	--	na	1.1E+06	--	--	na	1.1E+05	--	--	na	1.1E+05	--	--	na	1.1E+05
Di-n-Butyl Phthalate	0	--	--	na	4.5E+03	--	--	na	4.5E+03	--	--	na	4.5E+02	--	--	na	4.5E+02	--	--	na	4.5E+02
2,4 Dinitrophenol	0	--	--	na	5.3E+03	--	--	na	5.3E+03	--	--	na	5.3E+02	--	--	na	5.3E+02	--	--	na	5.3E+02
2-Methyl-4,6-Dinitrophenol	0	--	--	na	2.8E+02	--	--	na	2.8E+02	--	--	na	2.8E+01	--	--	na	2.8E+01	--	--	na	2.8E+01
2,4-Dinitrotoluene <sup>C</sup>	0	--	--	na	3.4E+01	--	--	na	3.4E+01	--	--	na	3.4E+00	--	--	na	3.4E+00	--	--	na	3.4E+00
Dioxin 2,3,7,8- tetrachlorodibenzo-p-dioxin	0	--	--	na	5.1E-08	--	--	na	5.1E-08	--	--	na	5.1E-09	--	--	na	5.1E-09	--	--	na	5.1E-09
1,2-Diphenylhydrazine <sup>C</sup>	0	--	--	na	2.0E+00	--	--	na	2.0E+00	--	--	na	2.0E-01	--	--	na	2.0E-01	--	--	na	2.0E-01
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	8.9E+01	5.5E-02	1.4E-02	na	8.9E+00	5.5E-02	1.4E-02	na	8.9E+00	5.5E-02	1.4E-02	na	8.9E+00
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	8.9E+01	5.5E-02	1.4E-02	na	8.9E+00	5.5E-02	1.4E-02	na	8.9E+00	5.5E-02	1.4E-02	na	8.9E+00
Alpha + Beta Endosulfan	0	2.2E-01	5.6E-02	--	--	2.2E-01	5.6E-02	--	--	5.5E-02	1.4E-02	--	--	5.5E-02	1.4E-02	--	--	5.5E-02	1.4E-02	--	--
Endosulfan Sulfate	0	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	na	8.9E+00	--	--	na	8.9E+00	--	--	na	8.9E+00
Endrin	0	8.6E-02	3.6E-02	na	6.0E-02	8.6E-02	3.6E-02	na	6.0E-02	2.2E-02	9.0E-03	na	6.0E-03	2.2E-02	9.0E-03	na	6.0E-03	2.2E-02	9.0E-03	na	6.0E-03
Endrin Aldehyde	0	--	--	na	3.0E-01	--	--	na	3.0E-01	--	--	na	3.0E-02	--	--	na	3.0E-02	--	--	na	3.0E-02

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	na	2.1E+03	--	--	na	2.1E+03	--	--	na	2.1E+02	--	--	na	2.1E+02	--	--	na	2.1E+02
Fluoranthene	0	--	--	na	1.4E+02	--	--	na	1.4E+02	--	--	na	1.4E+01	--	--	na	1.4E+01	--	--	na	1.4E+01
Fluorene	0	--	--	na	5.3E+03	--	--	na	5.3E+03	--	--	na	5.3E+02	--	--	na	5.3E+02	--	--	na	5.3E+02
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Guthion	0	--	1.0E-02	na	--	--	1.0E-02	na	--	--	2.5E-03	na	--	--	2.5E-03	na	--	--	2.5E-03	na	--
Heptachlor <sup>C</sup>	0	5.2E-01	3.8E-03	na	7.9E-04	5.2E-01	3.8E-03	na	7.9E-04	1.3E-01	9.5E-04	na	7.9E-05	1.3E-01	9.5E-04	na	7.9E-05	1.3E-01	9.5E-04	na	7.9E-05
Heptachlor Epoxide <sup>C</sup>	0	5.2E-01	3.8E-03	na	3.9E-04	5.2E-01	3.8E-03	na	3.9E-04	1.3E-01	9.5E-04	na	3.9E-05	1.3E-01	9.5E-04	na	3.9E-05	1.3E-01	9.5E-04	na	3.9E-05
Hexachlorobenzene <sup>C</sup>	0	--	--	na	2.9E-03	--	--	na	2.9E-03	--	--	na	2.9E-04	--	--	na	2.9E-04	--	--	na	2.9E-04
Hexachlorobutadiene <sup>C</sup>	0	--	--	na	1.8E+02	--	--	na	1.8E+02	--	--	na	1.8E+01	--	--	na	1.8E+01	--	--	na	1.8E+01
Hexachlorocyclohexane																					
Alpha-BHC <sup>C</sup>	0	--	--	na	4.9E-02	--	--	na	4.9E-02	--	--	na	4.9E-03	--	--	na	4.9E-03	--	--	na	4.9E-03
Hexachlorocyclohexane																					
Beta-BHC <sup>C</sup>	0	--	--	na	1.7E-01	--	--	na	1.7E-01	--	--	na	1.7E-02	--	--	na	1.7E-02	--	--	na	1.7E-02
Hexachlorocyclohexane																					
Gamma-BHC <sup>C</sup> (Lindane)	0	9.5E-01	na	na	1.8E+00	9.5E-01	--	na	1.8E+00	2.4E-01	--	na	1.8E-01	2.4E-01	--	na	1.8E-01	2.4E-01	--	na	1.8E-01
Hexachlorocyclopentadiene	0	--	--	na	1.1E+03	--	--	na	1.1E+03	--	--	na	1.1E+02	--	--	na	1.1E+02	--	--	na	1.1E+02
Hexachloroethane <sup>C</sup>	0	--	--	na	3.3E+01	--	--	na	3.3E+01	--	--	na	3.3E+00	--	--	na	3.3E+00	--	--	na	3.3E+00
Hydrogen Sulfide	0	--	2.0E+00	na	--	--	2.0E+00	na	--	--	5.0E-01	na	--	--	5.0E-01	na	--	--	5.0E-01	na	--
Indeno (1,2,3-cd) pyrene <sup>C</sup>	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	na	1.8E-02	--	--	na	1.8E-02	--	--	na	1.8E-02
Iron	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Isophorone <sup>C</sup>	0	--	--	na	9.6E+03	--	--	na	9.6E+03	--	--	na	9.6E+02	--	--	na	9.6E+02	--	--	na	9.6E+02
Kepone	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	0.0E+00	na	--	--	0.0E+00	na	--	--	0.0E+00	na	--
Lead	0	4.9E+01	5.6E+00	na	--	4.9E+01	5.6E+00	na	--	1.2E+01	1.4E+00	na	--	1.2E+01	1.4E+00	na	--	1.2E+01	1.4E+00	na	--
Malathion	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	2.5E-02	na	--	--	2.5E-02	na	--	--	2.5E-02	na	--
Manganese	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Mercury	0	1.4E+00	7.7E-01	--	--	1.4E+00	7.7E-01	--	--	3.5E-01	1.9E-01	--	--	3.5E-01	1.9E-01	--	--	3.5E-01	1.9E-01	--	--
Methyl Bromide	0	--	--	na	1.5E+03	--	--	na	1.5E+03	--	--	na	1.5E+02	--	--	na	1.5E+02	--	--	na	1.5E+02
Methylene Chloride <sup>C</sup>	0	--	--	na	5.9E+03	--	--	na	5.9E+03	--	--	na	5.9E+02	--	--	na	5.9E+02	--	--	na	5.9E+02
Methoxychlor	0	--	3.0E-02	na	--	--	3.0E-02	na	--	--	7.5E-03	na	--	--	7.5E-03	na	--	--	7.5E-03	na	--
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	0.0E+00	na	--	--	0.0E+00	na	--	--	0.0E+00	na	--
Nickel	0	1.0E+02	1.1E+01	na	4.6E+03	1.0E+02	1.1E+01	na	4.6E+03	2.5E+01	2.8E+00	na	4.6E+02	2.5E+01	2.8E+00	na	4.6E+02	2.5E+01	2.8E+00	na	4.6E+02
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Nitrobenzene	0	--	--	na	6.9E+02	--	--	na	6.9E+02	--	--	na	6.9E+01	--	--	na	6.9E+01	--	--	na	6.9E+01
N-Nitrosodimethylamine <sup>C</sup>	0	--	--	na	3.0E+01	--	--	na	3.0E+01	--	--	na	3.0E+00	--	--	na	3.0E+00	--	--	na	3.0E+00
N-Nitrosodiphenylamine <sup>C</sup>	0	--	--	na	6.0E+01	--	--	na	6.0E+01	--	--	na	6.0E+00	--	--	na	6.0E+00	--	--	na	6.0E+00
N-Nitrosodi-n-propylamine <sup>C</sup>	0	--	--	na	5.1E+00	--	--	na	5.1E+00	--	--	na	5.1E-01	--	--	na	5.1E-01	--	--	na	5.1E-01
Nonylphenol	0	2.8E+01	6.6E+00	--	--	2.8E+01	6.6E+00	na	--	7.0E+00	1.7E+00	--	--	7.0E+00	1.7E+00	--	--	7.0E+00	1.7E+00	na	--
Parathion	0	6.5E-02	1.3E-02	na	--	6.5E-02	1.3E-02	na	--	1.6E-02	3.3E-03	na	--	1.6E-02	3.3E-03	na	--	1.6E-02	3.3E-03	na	--
PCB Total <sup>C</sup>	0	--	1.4E-02	na	6.4E-04	--	1.4E-02	na	6.4E-04	--	3.5E-03	na	6.4E-05	--	3.5E-03	na	6.4E-05	--	3.5E-03	na	6.4E-05
Pentachlorophenol <sup>C</sup>	0	8.7E+00	6.7E+00	na	3.0E+01	8.7E+00	6.7E+00	na	3.0E+01	2.2E+00	1.7E+00	na	3.0E+00	2.2E+00	1.7E+00	na	3.0E+00	2.2E+00	1.7E+00	na	3.0E+00
Phenol	0	--	--	na	8.6E+05	--	--	na	8.6E+05	--	--	na	8.6E+04	--	--	na	8.6E+04	--	--	na	8.6E+04
Pyrene	0	--	--	na	4.0E+03	--	--	na	4.0E+03	--	--	na	4.0E+02	--	--	na	4.0E+02	--	--	na	4.0E+02
Radionuclides																					
Gross Alpha Activity (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Beta and Photon Activity (mrem/yr)	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Radium 226 + 228 (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Uranium (ug/l)	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Selenium, Total Recoverable	0	2.0E+01	5.0E+00	na	4.2E+03	2.0E+01	5.0E+00	na	4.2E+03	5.0E+00	1.3E+00	na	4.2E+02	5.0E+00	1.3E+00	na	4.2E+02	5.0E+00	1.3E+00	na	4.2E+02
Silver	0	1.0E+00	--	na	--	1.0E+00	--	na	--	2.6E-01	--	na	--	2.6E-01	--	na	--	2.6E-01	--	na	--
Sulfate	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
1,1,2,2-Tetrachloroethane <sup>C</sup>	0	--	--	na	4.0E+01	--	--	na	4.0E+01	--	--	na	4.0E+00	--	--	na	4.0E+00	--	--	na	4.0E+00
Tetrachloroethylene <sup>C</sup>	0	--	--	na	3.3E+01	--	--	na	3.3E+01	--	--	na	3.3E+00	--	--	na	3.3E+00	--	--	na	3.3E+00
Thallium	0	--	--	na	4.7E-01	--	--	na	4.7E-01	--	--	na	4.7E-02	--	--	na	4.7E-02	--	--	na	4.7E-02
Toluene	0	--	--	na	6.0E+03	--	--	na	6.0E+03	--	--	na	6.0E+02	--	--	na	6.0E+02	--	--	na	6.0E+02
Total dissolved solids	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Toxaphene <sup>C</sup>	0	7.3E-01	2.0E-04	na	2.8E-03	7.3E-01	2.0E-04	na	2.8E-03	1.8E-01	5.0E-05	na	2.8E-04	1.8E-01	5.0E-05	na	2.8E-04	1.8E-01	5.0E-05	na	2.8E-04
Tributyltin	0	4.6E-01	7.2E-02	na	--	4.6E-01	7.2E-02	na	--	1.2E-01	1.8E-02	na	--	1.2E-01	1.8E-02	na	--	1.2E-01	1.8E-02	na	--
1,2,4-Trichlorobenzene	0	--	--	na	7.0E+01	--	--	na	7.0E+01	--	--	na	7.0E+00	--	--	na	7.0E+00	--	--	na	7.0E+00
1,1,2-Trichloroethane <sup>C</sup>	0	--	--	na	1.6E+02	--	--	na	1.6E+02	--	--	na	1.6E+01	--	--	na	1.6E+01	--	--	na	1.6E+01
Trichloroethylene <sup>C</sup>	0	--	--	na	3.0E+02	--	--	na	3.0E+02	--	--	na	3.0E+01	--	--	na	3.0E+01	--	--	na	3.0E+01
2,4,6-Trichlorophenol <sup>C</sup>	0	--	--	na	2.4E+01	--	--	na	2.4E+01	--	--	na	2.4E+00	--	--	na	2.4E+00	--	--	na	2.4E+00
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Vinyl Chloride <sup>C</sup>	0	--	--	na	2.4E+01	--	--	na	2.4E+01	--	--	na	2.4E+00	--	--	na	2.4E+00	--	--	na	2.4E+00
Zinc	0	6.5E+01	6.6E+01	na	2.6E+04	6.5E+01	6.6E+01	na	2.6E+04	1.6E+01	1.6E+01	na	2.6E+03	1.6E+01	1.6E+01	na	2.6E+03	1.6E+01	1.6E+01	na	2.6E+03

Notes:

- All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
- Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
- Metals measured as Dissolved, unless specified otherwise
- "C" indicates a carcinogenic parameter
- Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.  
Antidegradation WLAs are based upon a complete mix.
- Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic  
= (0.1(WQC - background conc.) + background conc.) for human health
- WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens and Harmonic Mean for Carcinogens. To apply mixing ratios from a model set the stream flow equal to (mixing ratio - 1), effluent flow equal to 1 and 100% mix.

Metal	Target Value (SSTV)	Note: do not use QL's lower than the minimum QL's provided in agency guidance
Antimony	6.4E+01	
Arsenic	2.3E+01	
Barium	na	
Cadmium	9.9E-02	
Chromium III	6.3E+00	
Chromium VI	1.6E+00	
Copper	7.0E-01	
Iron	na	
Lead	8.4E-01	
Manganese	na	
Mercury	1.2E-01	
Nickel	1.7E+00	
Selenium	7.5E-01	
Silver	1.0E-01	
Zinc	6.5E+00	

# APPENDIX D

## TMDL Excerpt

### Car Wash General Permit Regulation Excerpt

# ***Development of Bacterial TMDLs for the Chowan Study Area***

**Prepared for:  
Virginia Department of Environmental Quality  
Submitted December 14, 2004  
Re-submitted April 25, 2005**



**Submitted by:  
MapTech, Inc., 1715 Pratt Drive, Suite 3200, Blacksburg VA 24060  
New River-Highlands RC & D, 100 USDA Drive, Suite F, Wytheville VA 24382**



**Table 3.4 Summary of VPDES permitted point sources in the Chowan Study Area.**

Receiving Water	Facility Name	Permit No	Design Flow (MGD)	Permitted For Fecal Control	Data Availability
<i>Upper Blackwater River Basin</i>					
Cypress Swamp (Hazel Swamp)	Surry County High School	VA0029025	0.020	Yes	1/90 – 3/01
Cypress Swamp (Hazel Swamp)	Surry County WWTF	VA0088463	0.13	Yes	3/01 – 8/04
<i>Upper Nottoway River Basin</i>					
Big Hounds Creek/U.T.	Victoria East Sewage Treatment Plant	VA0020184	0.4	Yes	2/99 - 4/04
Mallory Creek	DOC - Nottoway Correctional Center	VA0066869	0.35	Yes	5/99 - 4/04
Little Nottoway River/U.T.	Nottoway County Schools Nottoway High	VA0061158	0.0256	Yes	5/99 - 4/04

**Table 5.16 Land-based and Direct nonpoint source fecal coliform load reductions in the Rattlesnake (Creek) Swamp impairment for final allocation.**

Source	Total Annual Loading for Existing Run (cfu/yr)	Total Annual Loading for Allocation Run (cfu/yr)	Percent Reduction
<b>Land Based</b>			
Livestock Access	3.67E+12	3.67E+10	99.00
Barren	3.81E+12	6.17E+11	84.00
Commercial	4.52E+11	4.52E+09	99.00
Cropland	7.74E+13	7.74E+11	99.00
Pasture	7.97E+13	7.97E+11	99.00
Residential	3.56E+13	3.56E+11	99.00
Water	0.00E+00	0.00E+00	0.00
Wetlands	2.25E+14	3.60E+13	84.00
Woodland	2.68E+14	4.31E+13	84.00
<b>Direct</b>			
Human	1.10E+12	0.00E+00	100.00
Livestock	0.00E+00	0.00E+00	100.00
Wildlife	1.52E+13	5.33E+12	65.00

**Table 5.17 Average annual bacterial loads (cfu/year) modeled after TMDL allocation in the Chowan Study Area watershed impairments.**

Impairment	TMDL Standard	WLA (cfu/year)	LA (cfu/year)	MOS	TMDL (cfu/year)
Beaverpond Creek	<i>E. coli</i>	0.00E+00	2.62E+12	<i>Implicit</i>	2.62E+12
Big Hounds Creek VA0020184	<i>E. coli</i>	6.96E+11 6.96E+11	4.45E+12		5.14E+12
Cypress Swamp VA0088463	<i>E. coli</i>	2.26E+11 2.26E+11	6.33E+12		6.56E+12
Little Nottoway VA0066869 VA0061158	<i>E. coli</i>	6.54E+11 6.09E+11 4.46E+10	1.11E+13		1.18E+13
Nottoway River	<i>E. coli</i>	0.00E+00	1.04E+13		1.04E+13
Mill Swamp	<i>E. coli</i>	0.00E+00	8.06E+12		8.06E+12
Raccoon Creek	<i>E. coli</i>	0.00E+00	1.44E+13		1.44E+13
Rattlesnake (Creek) Swamp	<i>E. coli</i>	0.00E+00	1.53E+13		1.53E+13

## 9VAC25-194-70. General Permit.

### Part I

#### 9VAC25-194-70. General permit.

Any owner whose registration statement is accepted by the board will receive the following permit and shall comply with the requirements therein and be subject to all requirements of 9VAC25-31.

General Permit No.: VAG75

Effective Date: October 16, 2012

Expiration Date: October 15, 2017

#### GENERAL PERMIT FOR VEHICLE WASH FACILITIES AND LAUNDRY FACILITIES

#### AUTHORIZATION TO DISCHARGE UNDER THE VIRGINIA POLLUTANT DISCHARGE ELIMINATION SYSTEM AND THE VIRGINIA STATE WATER CONTROL LAW

In compliance with the provisions of the Clean Water Act, as amended, and pursuant to the State Water Control Law and regulations adopted pursuant thereto, owners of vehicle wash facilities and laundry facilities are authorized to discharge to surface waters within the boundaries of the Commonwealth of Virginia, except those specifically named in board regulations which prohibit such discharges.

The authorized discharge shall be in accordance with this cover page, Part I - Effluent Limitations and Monitoring Requirements, Part II - Conditions Applicable to All VPDES Permits, as set forth herein.

#### A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning with the permittee's coverage under this general permit and lasting until the permit's expiration date, the permittee is authorized to discharge wastewater originating from vehicle wash facilities that discharge a monthly average flow rate less than or equal to 5,000 gallons per day from outfall(s):

Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS	
	Minimum	Maximum	Frequency <sup>(3)</sup>	Sample Type
Flow (GPD)	NA	NL	1/Year	Estimate
pH (S.U.)	6.0 <sup>(1)</sup>	9.0 <sup>(1)</sup>	1/Year	Grab

TSS (mg/l)	NA	60 <sup>(2)</sup>	1/Year	5G/8HC
Oil and Grease (mg/l)	NA	15	1/Year	Grab

NL - No Limitation, monitoring requirement only

NA - Not applicable

5G/8HC - Eight Hour Composite—Consisting of five grab samples collected at hourly intervals until the discharge ceases, or until a minimum of five grab samples have been collected.

<sup>(1)</sup>Where the Water Quality Standards ([9VAC25-260](#)) establish alternate standards for pH in waters receiving the discharge, those standards shall be the maximum and minimum effluent limitations.

<sup>(2)</sup>Limit given is expressed in two significant figures.

<sup>(3)</sup>Discharge Monitoring Reports (DMRs) of yearly monitoring (January 1 to December 31) shall be submitted to the DEQ regional office no later than the 10th day of January of each year. The first DMR is due January 10, 2014.

## Part I

### A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

2. During the period beginning with the permittee's coverage under this general permit and lasting until the permit's expiration date, the permittee is authorized to discharge wastewater originating from vehicle wash facilities that discharge a monthly average flow rate greater than 5,000 gallons per day from outfall(s):

Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS	
	Minimum	Maximum	Frequency <sup>(3)</sup>	Sample Type
Flow (GPD)	NA	NL	1/6 Months	Estimate

<sup>(4)</sup>The effluent temperature shall not exceed a maximum 32°C for discharges to nontidal coastal and piedmont waters, 31°C for mountain and upper piedmont waters, 21°C for put and take trout waters, or 20°C for natural trout waters. For estuarine waters, nontidal coastal and piedmont waters, mountain and upper piedmont waters, and put and take trout waters, the effluent shall not cause an increase in temperature of the receiving stream of more than 3°C above the natural water temperature. For natural trout waters, the temperature of the effluent shall not cause an increase of 1°C above natural water temperature. The effluent shall not cause the temperature in the receiving stream to change more than 2°C per hour, except in the case of natural trout waters where the hourly temperature change shall not exceed 0.5°C.

<sup>(5)</sup>Applies only when the discharge is into freshwater (see [9VAC25-260-140](#) C for the classes of waters and boundary designations).

<sup>(6)</sup>Applies only when the discharge is into saltwater or the transition zone (see [9VAC25-260-140](#) C for the classes of waters and boundary designations).

<sup>(7)</sup>Applies only when the discharge is into shellfish waters (see [9VAC25-260-160](#) for the description of what are shellfish waters).

#### B. Special conditions.

1. The permittee of a vehicle wash facility shall perform inspections of the effluent and maintenance of the wastewater treatment facilities at least once per week and document activities on the operational log. This operational log shall be made available for review by the department personnel upon request.
2. There shall be no discharge of floating solids or visible foam in other than trace amounts.
3. No sewage shall be discharged from a point source to surface waters from this facility except under the provisions of another VPDES permit specifically issued for that purpose.
4. There shall be no chemicals added to the water or waste which may be discharged other than those listed on the owner's accepted registration statement, unless prior approval of the chemical (s) is granted by the board.
5. Wastewater should be reused or recycled whenever feasible.
6. The permittee of a vehicle wash facility shall comply with the following solids management plan:
  - a. All settling basins shall be cleaned frequently in order to achieve effective treatment.
  - b. All solids shall be handled, stored, and disposed of so as to prevent a discharge to state waters of such solids.

7. Washing of vehicles or containers bearing residue of animal manure or toxic chemicals (fertilizers, organic chemicals, etc.) into the wastewater treatment system is prohibited. If the facility is a self-service operation, the permittee shall post this prohibition on a sign prominently located and of sufficient size to be easily read by all patrons.

8. If the facility has a vehicle wash discharge with a monthly average flow rate of less than 5,000 gallons per day, and the flow rate increases above a monthly average flow rate of 5,000 gallons per day, an amended registration statement shall be filed within 30 days of the increased flow.

9. Any permittee discharging into a municipal separate storm sewer shall notify the owner of the municipal separate storm sewer system of the existence of the discharge within 30 days of coverage under the general permit and provide the following information: the name of the facility, a contact person and phone number, the location of the discharge, the nature of the discharge and the facility's VPDES general permit number.

10. Approval for coverage under this general permit does not relieve any owner of the responsibility to comply with any other federal, state, or local statute, ordinance, or regulation.

11. The permittee shall notify the department as soon as they know or have reason to believe:

a. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant that is not limited in this permit, if that discharge will exceed the highest of the following notification levels:

(1) One hundred micrograms per liter;

(2) Two hundred micrograms per liter for acrolein and acrylonitrile; five hundred micrograms per liter for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter for antimony;

(3) Five times the maximum concentration value reported for that pollutant in the permit application; or

(4) The level established by the board.

b. That any activity has occurred or will occur that would result in any discharge, on a nonroutine or infrequent basis, of a toxic pollutant that is not limited in this permit, if that discharge will exceed the highest of the following notification levels:

(1) Five hundred micrograms per liter;

(2) One milligram per liter for antimony;

(3) Ten times the maximum concentration value reported for that pollutant in the permit application; or

(4) The level established by the board.

12. Operation and maintenance manual requirement. The permittee shall develop and maintain an accurate operations and maintenance (O&M) manual for the treatment works. This manual shall detail the practices and procedures that will be followed to ensure compliance with the requirements of this permit. The permittee shall operate the treatment works in accordance with the O&M manual. The O&M manual shall be reviewed and updated at least annually and shall be signed and certified in accordance with Part II K of this permit. The O&M manual shall be made available for review by the department personnel upon request. The O&M manual shall include, but not necessarily be limited to, the following items, as appropriate:

- a. Techniques to be employed in the collection, preservation, and analysis of effluent samples;
- b. Discussion of best management practices, if applicable;
- c. Treatment system operation, routine preventive maintenance of units within the treatment system, critical spare parts inventory, and recordkeeping;
- d. A sludge/solids disposal plan; and
- e. Date(s) when the O&M manual was updated or reviewed and any changes that were made.

13. Compliance Reporting under Part I A 1- 4.

- a. The quantification levels (QL) shall be as follows:

Effluent Characteristic	Quantification Level
BOD <sub>5</sub>	2 mg/l
TSS	1.0 mg/l
Oil and Grease	5.0 mg/l
Chlorine	0.10 mg/l

- b. Reporting. Any single datum required shall be reported as "<QL" if it is less than the QL in subdivision a of this subdivision. Otherwise, the numerical value shall be reported.

- c. Monitoring results shall be reported using the same number of significant digits as listed in the permit. Regardless of the rounding convention used by the permittee (e.g., five always rounding up or to the nearest even number), the permittee shall use the convention consistently and shall ensure that consulting laboratories employed by the permittee use the same convention.

14. Samples taken as required by this permit shall be analyzed in accordance with [1VAC30-45](#), Certification for Noncommercial Environmental Laboratories, or [1VAC30-46](#), Accreditation for Commercial Environmental Laboratories.